How to Make Friends with Jaguars

From Market-Based Collusion to Chasing Conviviality in Big Cat Conservation

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Abstract

Jaguars are one of Mexico's most iconic species. They are ecologically crucial and charismatic animals that inform conservation strategies. This thesis examines jaguar conservation programmes in Southern Mexico, the region with the best-preserved American tropical forest north of the Amazon and home to the largest jaguar population in the country. Drawing on fieldwork in Laguna Om, a rural community near the border with Belize, it employs a political ecology analysis to show how jaguar conservation is complicit with the deleterious capitalist economy, responsible for the decline of the species. It demonstrates how market-based instruments and other instances of what scholars term 'neoliberal conservation' facilitate harmful infrastructural expansion, exacerbate capitalist value capture, and advance dispossession to the detriment of big cats, tropical forests, and local people. This research closely follows calls for decolonising conservation practice and points towards potential elements for a post-capitalist vision. Building on proposals for 'convivial conservation' and other alternatives to market-oriented schemes, it promotes non-commodified coexistence between humans and non-humans. This monograph dissects the ties of jaguar conservation with a destructive form of development and investigates why people in Laguna Om care about protecting more-than-human nature. In doing so, it explores possibilities for detaching conservation from the growth-driven economy and redirecting it towards a convivial future for people and big cats.

Keywords: Political ecology, conservation, jaguars, neoliberal conservation, decolonising conservation, convivial conservation, conviviality

Acknowledgements

No one exists in isolation. We are all made of the multiple connections we build with others. And if the rest of this thesis is an attempt at tracing relationships and interdependence, then it should start by acknowledging the ones that made this text possible, as well as the people that marked the fantastic chunk of lifetime that unfolded while writing it.

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absolute joy. For sharing the struggle, the cake, the drinks in the park, and the blurry late nights. Also, thank you for showing me that, in times of ecological breakdown, hope does not necessarily come from expecting things to get better. To be honest, I am not optimistic that they will. Rather, it is born from the connections welded as we navigate precarity. Being hopeful means realising that anxiety breeds friendship; that fear begets togetherness; that adversity creates community, and that no matter how uncertain things get, it is sharing with those beside you that makes it all mean something.

Contents

List of Acronyms and Translations

ANCJ – National Alliance for Jaguar Conservation

CBR – Calakmul Biosphere Reserve

Comisariado – Main governance body in the ejido, integrated by a commissary, a treasurer, and a secretary, all of whom are democratically elected

Comisario – Chairperson of the comisariado

Conafor – Nacional Forestry Comission

Conasupo – National Company for Popular Subsistence

Ejido – Rural community characterised by communal land tenure and democratic internal decision-making

Fonatur – National Tourism Fund

GATO – Group of Technical and Operative Assistance

LGEEPA – General Law of Ecological Equilibrium

MBIs – Market-Based Conservation Instruments

PES – Payments for Ecosystem Services

Procampo – Programme for Direct Agrarian Support

Procede – Programme for Certification of Ejido Land Rights

Profepa – Federal Environmental Enforcement Bureau

Semarnat – Ministry of Environment and Natural Resources

UNAM – National Autonomous University of Mexico

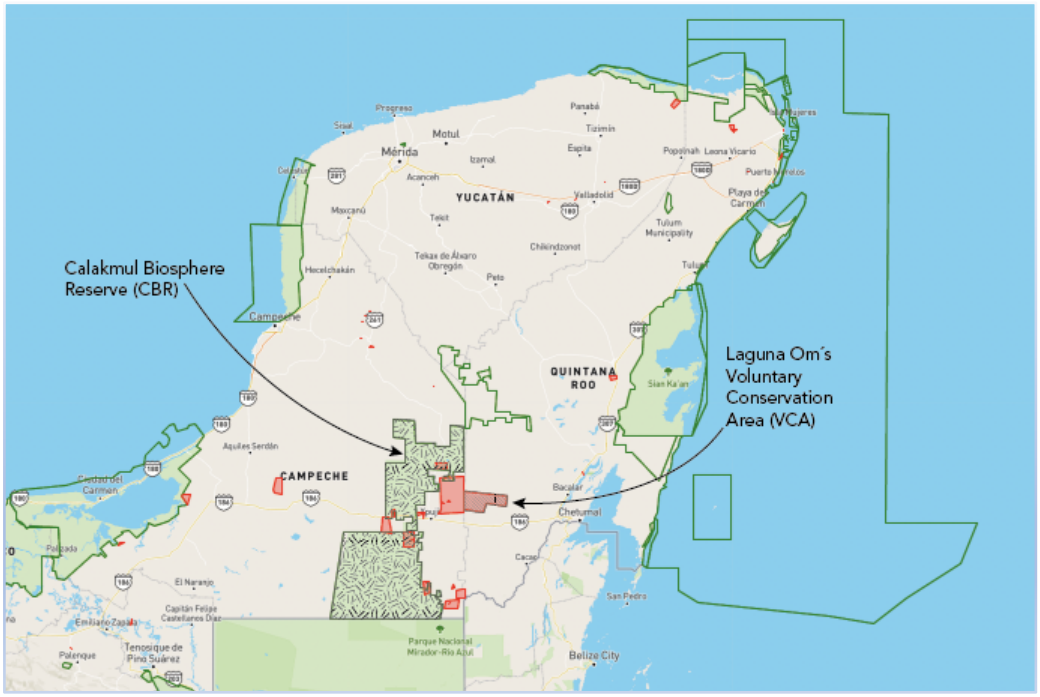
UN-Habitat – United Nations Human Settlements Programme

VCA – Voluntary Conservation Area

WWF – World Wildlife Fund

Maps

Figure 1 – Map of Mexico marking the Yucatán Peninsula. Source: Google Maps



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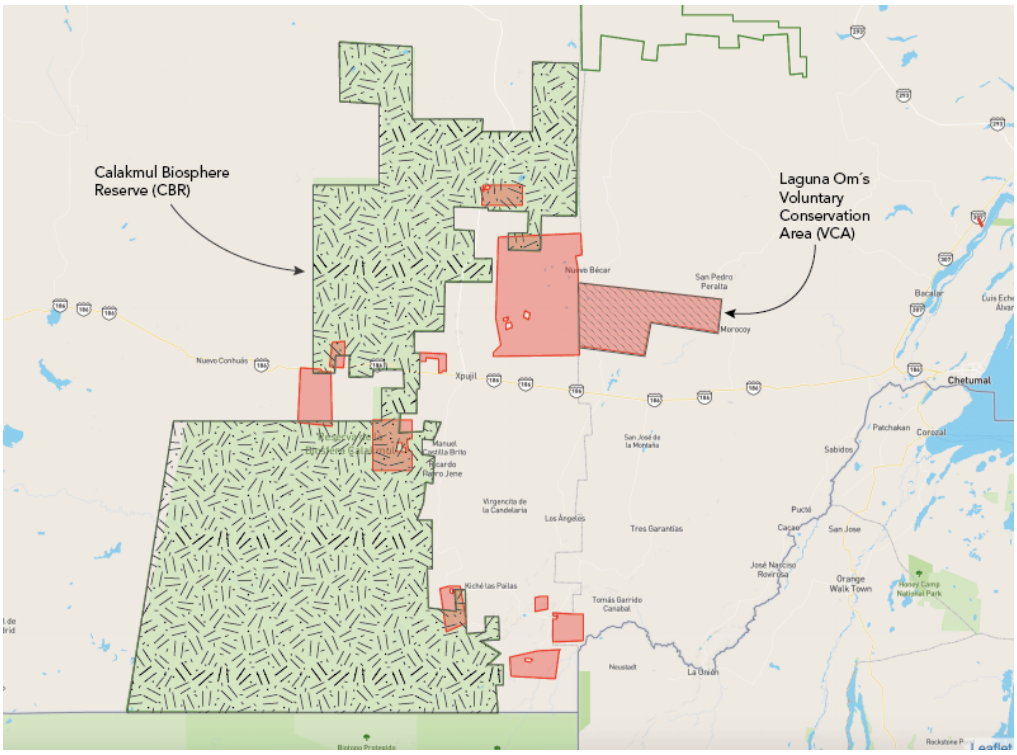

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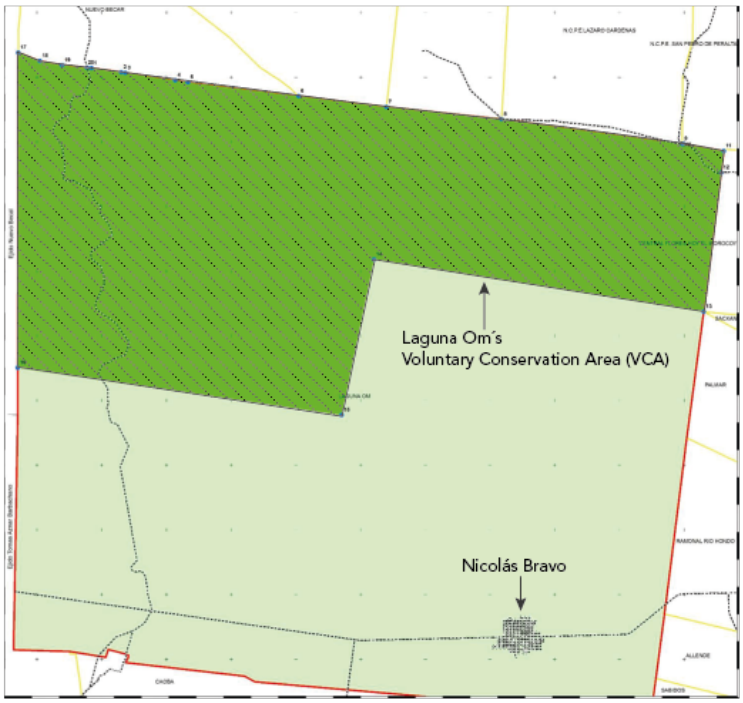

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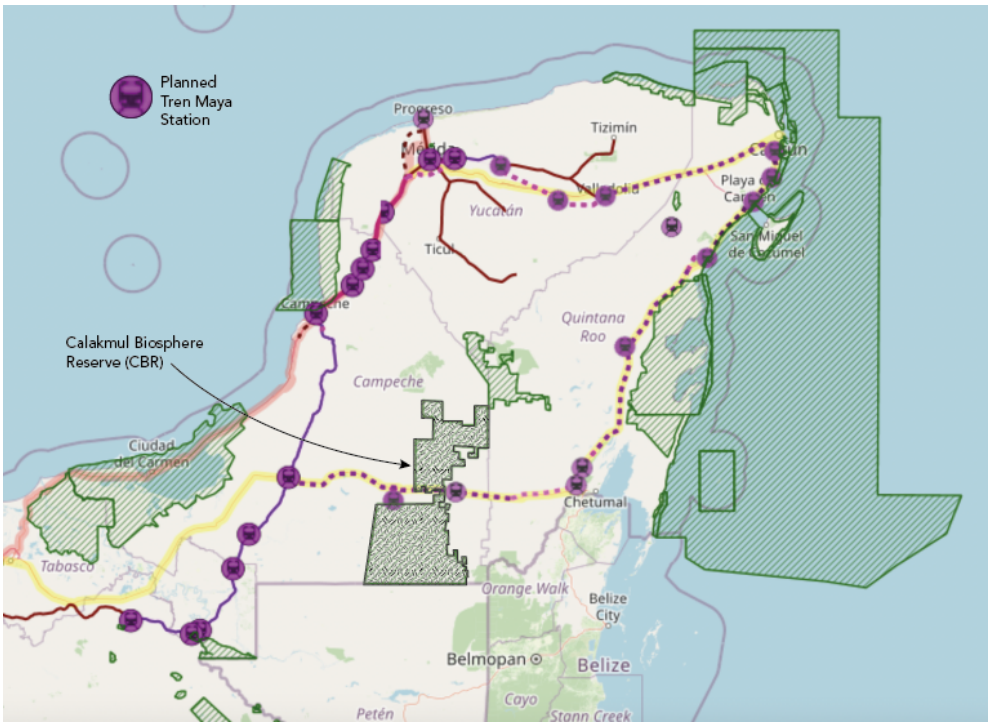

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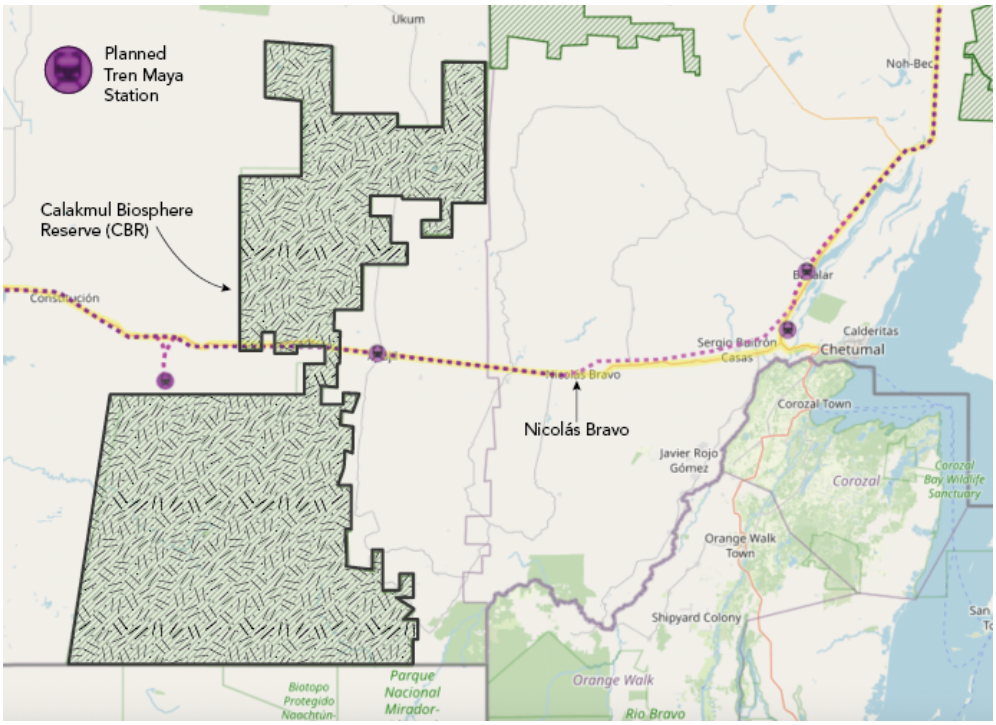

Figure 6 – Close up to the Tren Maya route in the area of study. The dotted line marks the projected train tracks, running parallel to the existing federal highway (yellow) (GeoComunes and Rosa Luxemburg Stiftung 2021, modified by the author).

Chapter 1 – Introduction

It had been pouring for hours. The rain splattered on the tin sheets of the roof, drowning out any other sound coming from the fields or the jungle beyond. It was proper rain, the kind that could make the river overflow, not the feeble showers that are common today. Tropical deluges were not unusual in Southern Mexico 25 years ago. The jungle close to the border with Belize used to be much wetter; it had more wildlife, too. Despite the torrential precipitation, however, there was nothing too special about that night in the hut. He was lying in his hammock, close to the fire he always kept burning until dawn. But the dog would not stop howling. It barked and whined crawling under him, like it was trying to hide. "When I woke up to pee that morning, I saw the tracks!" said the man with a joyful, deep voice that made his speech sound like song. Those were jaguar tracks. They circled the hut, again and again, showing him that the feline must have walked around it a hundred times, not daring to go in because of the glowing fire.

I have often wondered what it is like to live with jaguars. Stories like this, told by a middle-aged man who has spent most of his time living close to the tropical forest in the south of the country, offer a glimpse into a fascinating reality that not many get to experience. I grew up in a city surrounded by jungle but never came across a jaguar. Big cats, for most of us, are fascinating ghosts that walk stealthily among the trees, symbols of a distant wilderness. For people who share their landscape, however, they can be much more tangible. Humans and jaguars influence each other's realities constantly.

Jaguars are also ecologically crucial animals. They are apex predators, the top of the food chain, and play an important role in the stability of trophic networks by regulating the number of prey (Cruz et al. 2021). Sensitive to changes in the jungle, such as the amount of food available and the size and quality of the forested areas (Araiza et al. 2007), they serve as proxies for the health of entire ecosystems and help guide conservation decisions that affect many more creatures (Ceballos et al. 2016). Jaguars are also severely threatened. At the time the Spaniards first set foot in the Americas, there were around 300,000 jaguars on the entire continent. Those numbers are down to about 50,000, mostly located in Brazil (Medellín et

al. 2016). Outside of the Amazon, their populations have declined by 82% over the past century (Cruz et al. 2021). It is estimated that they have lost almost half of their geographic range since the early 1900s (Cruz et al. 2021). In Mexico, specifically, their territory once went virtually uninterrupted from the jungles of the south and throughout the Gulf and Pacific coasts, all the way to the border with the United States, where the northernmost sightings of the species are registered (Ceballos et al. 2021). They occupied practically every tropical and subtropical region in the country, and although they are still present in most of their original range, habitat loss and fragmentation, retaliatory killing, reduced abundance of their natural prey, and diseases transmitted by domestic animals have pushed them to isolated forest areas, jeopardising the long-term viability of the species (Ibid.). If this long-term trend continues, Mexican jaguars could soon be extinct.

This thesis walks alongside jaguars in Mexico, although it is not a study of jaguar ecology. It does not offer insight into the charismatic carnivore's behaviour or elucidate new aspects of its biological interactions. Sadly, it also lacks thrilling first-person encounters with the big cats. The closest I got to a jaguar was stumbling upon fresh prints on a muddy trail and seeing the emotion in the eyes of people who have seen them in the wild. Stories and interviews are the primary source of data for a thesis that examines not jaguars, but jaguar conservation. It is guided by a central research question: *Why do rural communities in the Southern Yucatán Peninsula choose to participate in jaguar conservation programmes?* But what do I mean by 'jaguar conservation'? I am referring to the entanglement of strategies, discourses, programmes, and actors that work to save the felids from extinction. Scientific research, protected areas, financial incentives, publicity campaigns, corporate pledges, NGO manoeuvres, and government schemes are the building blocks of an intricate network that aims to keep jaguars away from the ecological abyss. But, is jaguar conservation doing what it purports to?

Despite recent optimism – the jaguar population in the country was found to have *increased* over the last ten years (Ceballos et al. 2021) – this thesis argues that the conservation network is failing. By pushing market-based instruments and aligning with corporations and the state to offset the impacts of new development projects, jaguar conservation in Southern Mexico

is now complicit with the decline of the species, their habitat, and the well-being of the rural communities that coexist most closely with the animals. This has not happened for a lack of goodwill from conservation professionals. There are committed individuals working on all levels of conservation, the same in state agencies, protected areas, and non-governmental organisations. Rather, the deficiency comes from the entanglement of the mainstream conservation model with the capitalist industrial economy that is responsible for the global environmental decline. Saving jaguars has become a tool for capturing value from the jungle, advancing processes of dispossession in rural contexts, and further colonising an area often portrayed as 'underdeveloped'.

The following chapters show how jaguar conservation is enabling the expansion of a destructive form of development across the Yucatán Peninsula and further linking rural communities with the capitalist economy. The entire area is at a crucial point in time. Large-scale infrastructure projects are articulating industrial growth in a region that still harbours enourmous biological diversity. A new railway line known as Tren Maya will soon connect cities, villages, and tourist hubs, kindling so-called 'sustainable development' and piercing a tree-covered area that spills over the borders with Belize and Guatemala, the vastest remaining tropical forest north of the Amazon (Ponce and Ceballos 2017). That place is home to about 15% of Mexico's jaguar population (Ibid.), and although it is far from pristine, it is a vital ecosystem that supports thousands of non-human species – and humans too.

Right at the crossroads of development and jaguar conservation is Laguna Om, an *ejido* – rural community – where I conducted fieldwork for this project. It is located 50 km away from the border with Belize and almost adjacent to the Calakmul Biosphere Reserve (CBR), the largest protected area in the region. Laguna Om has been part of jaguar conservation efforts for years. It was one of the monitoring sites of a country-wide study that led to the pioneering National Jaguar Census (Ceballos et al. 2021), and in 2019, the community certified 35,000 hectares of jungle as a Voluntary Conservation Area (VCA). Together with neighbouring *ejido* Nuevo Bécal, it makes up the largest community forest massif in Mexico. Further, Tren Maya will cut right through the *ejido* as it traverses the Yucatán Peninsula from coast to coast (see Figure 6), bringing hopes of economic growth to a community that has

experienced first-hand the effects of neoliberal economic and environmental policies. Infrastructure, financial markets, NGO's, state agencies, and rural communities are intertwined in a changing landscape that brings into sharp focus the complicity of market-oriented conservation in facilitating capitalist expansion. Jaguars are our lens to see this mesh at work.

This research explores how conservation grid opeates in a still hugely biodiverse part of the world. Chapter 2 looks into the history of the region. It takes us back to the 1940s, when the area known as the Maya Jungle was sparsely populated and jaguars used to walk on village roads, to follow the evolution of forestry policies, migration processes, and development projects that moulded the area over the following decades. It offers an overview of the structure of *ejidos*, rural societies unique to Mexico, and follows changes in the global political economy that influenced visions of development and relationships with more-than-human nature. Chapter 3 further connects conservation to the dominant political economy. It sets the theoretical foundations that show how saving nature is a tool for capital accumulation and situates the thesis among calls for refocusing conservation away from the industrial-colonial complex. It presents rich discussions of what is increasingly labelled as 'neoliberal conservation' (Dunlap and Sullivan 2020; Büscher and Fletcher 2015), and a growing body of research that makes the case for decolonising conservation practice. Moreover, it builds on proposed alternatives to employ notions of conviviality (Illich 1973) to detach biodiversity conservation from the political and economic drivers of environmental decline. Chapter 4 details the methodological aspects of the project, from the tools used for gathering data to a discussion of the method itself, making us aware of the problems of representation and positionality that are inherent to ethnographic research.

The next three sections present and discuss the results of fieldwork. Chapter 5 takes a deep plunge into the social fractures of Laguna Om to show how conservation exploits them to link rural communities to global capitalist circuits. It argues, poverty, hopes for development, and local hierarchies are mobilised to open avenues for investments that reinforce *ejidos'* reliance on subsidies, deepening the dependency that spawned during the neoliberal reconstruction of the economy. Next, the logic and financial instruments of neoliberal

conservation take a material dimension as we follow the construction of new infrastructure in the region. Chapter 6 explains how the logic of 'offsetting' or 'mitigating' environmental damage makes conserving jaguars a tool to justify destructive industrial development, further establishing state territorial control and reducing nature to abstract commodities that are traded through financial markets. The text takes a more optimistic turn in Chapter 7, which investigtes alternatives to mainstream conservation. It explores non-commodified relationships with jaguars and other more-than-human nature to refute the widespread view that monetary incentives are the primary reason why people care about protecting the environment. It follows the stories of those directly or indirectly involved in jaguar conservation in Laguna Om to foreground convivial values that cannot be reduced to producer-consumer transactions. Lastly, Chapter 8 concludes with a call to restructure jaguar conservation and engage with the complex realities of the communities that experience first-hand the consequences of environmental interventions.

Conservation can change. In fact, some argue, it is already changing, impelled by the growing realisation that the current solutions are insufficient to halt – and are actually bolstering – the voracity of the dominant economic model (Büscher and Fletcher 2020). Simultaneously, however, there is an opposite force at play. The market-driven imperative for economic growth is using conservation to sanitise destruction and justify the conquest of new territories, now arguing its motives are 'green' (Ogada 2019). Conservation practice, it seems, is ever more entangled with the deleterious consequences of capitalism. Recognising these processes requires the input of the social sciences. Critical scholarship rooted in political ecology can pluralise debates around biodiversity conservation (Massarella et al. 2021) and deepen vital engagements with the social, political, and human dimensions of conservation (Chua et al. 2020). It can provide methodological tools the natural sciences lack and challenge the divide between human and non-human nature, helping conservation sever its ties with the causes of environmental degradation (Büscher and Fletcher 2020). This thesis builds on arguments for such reconstruction. Via keen critique and a curious gaze, it aims to advance the search for new courses of action. Jaguars, I hope, can be more than a fascinating species that walks quietly in the tropical forest. They may allow us to see the shortcomings of conservation and be a source of inspiration to find paths towards a more hopeful future.

Chapter 2 – Background: A Brief History of a Mutating Landscape

At night, you can't hear a thing. No, it is not silent. There are many sounds – a cacophony of night-dwelling creatures that are well busy as soon as the land goes dark. You can hear each one of them buzzing, chirping, squeaking, rustling. But these are not *things*. Except for the soft creaking of the hammock, everything man-made seems to be either asleep or far away from the edge of the jungle. This place, where the agricultural land of Laguna Om merges with its community forest reserve appears to be at ease. But the stillness is a mere illusion. The forest is a changing landscape, and it is bound to change faster still.

Go to Google Maps. Zoom in to the south of the Yucatán Peninsula, where the shoulders of Mexico, Belize, and Guatemala touch. That is the Maya Jungle, a mesh of forests, rivers, lagoons, and savannahs that once covered everything from the Mexican states of Tabasco and Chiapas to the coast of Belize. It blanketed most of the state of Quintana Roo and climbed along the Peninsula's Caribbean coastline up to its north-eastern tip (Primack et al. 1999). Of course, not all of it is green anymore. A birds-eye view shows a mosaic of tropical woodlands, plantations, roads, villages, and cities. On the Mexican side, perhaps the thickest tree cover is found within the polygon of the Calakmul Biosphere Reserve (CBR) (see Figure 2), a 723,185-hectare protected area adjoining Guatemala's Maya Biosphere Reserve. Together, they make up the largest remaining tropical rainforest north of the Amazon, home to at least 500 vertebrate species – including an estimated 600 jaguars (Ponce and Ceballos 2017) – and almost 2,000 known species of plants.

The rest of the forested land you can see on the satellite image belongs to rural communities known as *ejidos*. One of them is Laguna Om, Quintana Roo. It has a total territory of 84,998 hectares, 35,000 of which are registered, since 2019, as a Voluntary Conservation Area (VCA) (Sosetec 2018) (see Figure 4). Together with neighbouring Nuevo Bécal, which also has a VCA, they make up the largest community jungle massif in the entire peninsula. Laguna Om has a population of 3,650 people (Ibid.), most of whom live in Nicolas Bravo, a village

that sits on a federal highway that crosses the peninsula from east to west. The tarmac line splits the Maya Jungle in two and provides the main infrastructural axis in the area.

This chapter presents a historical overview of the region, the Southern Yucatán Peninsula, and specifically of the research site, Laguna Om. It offers a detailed explanation of the basic structure of *ejidos*, rural societies unique to Mexico that were severely impacted by the advent of neoliberalism. Next, it follows the social, political, and economic circumstances of the last few decades, situating us in the current political-economic landscape and explaining how the community's relationship with the jungle and jaguars has evolved overtime. Moreover, it shows how conservation and other environmental policies have shifted along with changes in the global capitalist system. Lastly, it ties jaguar conservation with infrastructure development in the region, allowing us to see the links between environmental interventions and the morphing global economy.

Colonising the jungle

The history of Laguna Om began in the 1920s, when the natural rubber industry was booming worldwide and the national government issued concessions for its extraction in Quintana Roo (Merino-Pérez 2004). Back then, Quintana Roo was not even a state, it was a national territory, one seen as so remote that it was often used as an open-air prison (Maldonado 2021). However, enticed by the possibility of owning land, workers from other parts of the country, primarily the Gulf Coast states of Tabasco and Veracruz, began the first migration to a hot and humid area that at the time was inhabited by around 2,000 people (Macario 2020) While Maya populations persisted – and still do – further north, the south was almost deserted (Merino-Perez 2004). A re-composition of its population ensued.

In the late 1930s, during the presidency of Lázaro Cárdenas, began the largest land restoration movement in Mexico's history. Following the demands of the Mexican Revolution, the government created *ejidos*, communally owned land that would put the immense estates of former haciendas and other national territories back in the hands of the people who worked in them. *Ejido*s became the base of communal tenure and the seams of the country's social fabric. For almost a century, they have afforded rural communities with sustenance, income,

and identity (Candelas-Ramírez 2019). Today, 52% of the national territory – including around 70% of waterways and 80% of forests – belongs to *ejidos* (Cámara de Diputados 2015). Within these communities, each individual *ejidatario* has the right to a plot of land where they can grow crops or carry out any other economic activity permitted by the community's internal law. Communal work known as *fajinas* is also carried out collectively for the benefit of the entire community (Torres-Mazuera 2014). The main authority within the *ejido* is the Assembly, a direct democratic organ where all the recognised landowners have equal voting rights. There is also an internal governing body headed by the *ejido*'s *comisario*, an elected official who serves along with a secretariat, a treasurer, and a Security Council responsible for observing internal rules such as hunting bans, managing fire hazards, and patrolling the *ejido*'s boundaries. Together they form the *comisariado*, the representative body of the community. They negotiate policies with agrarian authorities, mediate conflicts with neighbouring *ejido*s, prospect cash transfers, and administer all monies coming to the *ejido* via government programmes.

Laguna Om was formalised as an *ejido* in 1941, and from the start, it was tied to the forest. Over 74,000 hectares of woodlands were given to 175 *ejidatarios* whose primary economic activities were rubber harvesting, hunting, small-scale agriculture and, later, incipient cattle ranching (Macario 2020). As the rubber market declined, commercial forestry also appeared, concentrating on cedar and mahogany. Today, the territory of Laguna Om is divided into two main areas: agricultural land and the Permanent Forest Area. The former is composed of parcels for individual economic use, an urban area, and other especially allocated plots. Following a forestry policy package that came about in 1983, the latter, 35,000 hectares of jungle, is an area that must maintain tree cover to be eligible for state-certified wood extraction (Ibid.). Forestry activities are collectively managed, which means the income derived from wood and other by-products is evenly distributed among all *ejidatarios*. Also, Laguna Om and other *ejidos* that share similar conditions have very close relationships with the Nacional Forestry Commission (Conafor), which dictates rules for forestry activities, hands out logging permits, and manages subsidies for sustainable resource management and other environmentally related activities.

Industrial exploitation of Quintana Roo's forests started in 1953 with massive forestry concessions to private contractors, some of which overlapped with recently created *ejidos* and created agrarian conflicts (Merino-Pérez 2004). But it was the 1960s and 1970s that would radically change the face of the region. The federal government had embarked on a double project: populating Quintana Roo to officialise it as a new state and securing the southern border. It used the growing peasant demand for land to reactivate Cardenas' agrarian reform and started the 'directed colonisation' of Mexico's tropical regions (Mendoza 1997). During the presidency of Luis Echeverría (1970-1976), some 10,000 families migrated to the south of Quintana Roo and Campeche, near the border with Belize, and nearly 500,000 hectares of jungle were distributed to create new *ejido*s (Merino-Pérez 2004), as well as 10 new population centres (Mendoza 1997), including Laguna Om's Nicolás Bravo.

Information about jaguars around that time is patchy at best. Systematic registers of the species' populations began in the late 1990s. However, local stories say jaguars, or rather *tigers*, as people call *Panthera onca* in this part of the country, once lived much closer to humans. "When my father arrived in the village, there were no roads and *tigers* used to walk on the paths," recounted a woman whose family migrated to Laguna Om in the 60s. "It was a peaceful time. You could just choose a tree and comfortably sleep under it". Another man in his late 50s said that he had once ridden his bike not ten meters behind a jaguar that was casually trotting on a track. Big cats were also heavily hunted. In one of the few texts documenting jaguar populations in the mid 1960s, A. Starker Leopold wrote that "as a result of constant persecution, jaguars are now scarce in tropical areas used for agriculture" (Leopold quoted in Medellín et al. 2016, 48). At the time, jaguar trophy hunting was legal – it was outlawed decades later, in 1987. And as *chicleros* – rubber harvesters – and industrial logging companies delved deeper into the forest, it was common for hunting and fur trade to feature as a side business. A man, now in his 80s, remembers:

> There was a person from Villahermosa [the capital of the state of Tabasco] who bought the pelts from *chicleros*. He would even provide them with weapons and ammunition […]. They did a lot of harm because *chicleros* spend months at a time in the jungle. There were many of them, all of them carrying rifles, and they would shoot anything: *tigers,* pumas, ocelots, deer, crocodiles, wild boars, whatever they could find to sell the pelts.[1]

"There was also a man called Galera, nicknamed El Tigre, who bought pepper, rubber and pelts," recounted another man while he reminisced on how his father would roll up crocodile skins on a stick and cure them with salt. "That was people's livelihood: selling jaguar and crocodile pelts, and growing corn."[2]

Simultaneously, Quintana Roo's population grew. People from all over the country came to the jungle in search of land and better fortune and, as several interviewees pointed out, the demographic composition has remained in flux, with a constant coming and going of people. For decades, the colonisation efforts had floundered, mainly because newcomers failed to 'take root' and quickly abandoned a place that was still enormously isolated (Mendoza 1997). Further, as opposed to Maya *ejido*s in the central area of Quintana Roo, collective identity in the south was uneven, composed of the myriad of backgrounds, ethnicities, and personal stories of the people who relocated there.

In the 1970s, however, populating efforts were accompanied by huge investments in infrastructure and a forest policy designed to detonate economic growth. These policies ran under the premise that the practices of "Maya and forest *ejido*s either sub-utilised or destroyed the productive potential of the jungle" (Merino-Pérez 2004, 96). Traditional *milpa* – itinerant slash–and–burn agriculture – would be replaced by high-tech agroindustry, and subsistence ranching would give way to commercial farms meant to feed new cities and the incipient tourist industry in the north of Quintana Roo (Ibid.). Via a National Ranching Programme and a National Forest Clearing Commission, the government financed the removal of astounding areas of jungle (Ibid.). Habitat destruction and fragmentation, the primary killer of jaguars (Ceballos et al. 2021), went through the roof. Deforestation rates reached 1.5 million hectares per year and 80% of Mexico's rainforests were lost (Toledo and Ordoñez 1993). And although jaguars still exist in most of their historical range (Ceballos et al. 2021), in vast tropical areas, especially on the Gulf Coast and the centre of the Yucatán Peninsula, they are gone.

Abundance, neoliberalisation, conservation

The decades of the 1970s and 1980s are remembered in Laguna Om with profound nostalgia.

> I swear I am not lying. The dome of the Conasupo[i] bodega was full of corn from floor to ceiling. Sacks of it were heaped 20 metres high. […] Each farmer had 15 or 20 hectares of corn. My father used to harvest 50 or 60 sacks per hectare. Now you can barely get 30. […] There was so much corn that if a truck got stuck on the road, they would use full sacks of it to fill potholes and get the cars out. It sounds like I'm lying, but I swear it's true.[3]

That story, told by a man in his late 50s, was one of many I heard relating to the lost abundance of the *ejido*. During those golden years, some say, entire blocks in Nicolás Bravo were insufficient to hold all the wood that kept coming from the jungle. There was so much rice that it took lorry after lorry to transport it. Hundreds of heads of cattle used to graze in vast prairies. The *ejido* owned state-of-the-art machinery, including an industrial-calibre sawmill. Funfairs used to be loud and colourful, and there was even a big commemorative arch especially built out of thick prime logs for President Echeverria's visit. I did not see any of it, but almost everyone old enough to remember it – and some who were not – spoke of the 70s' and 80s' bonanza and regarded with sorrow the current state of the community.

Those decades saw an agro-industrial explosion that brought money to the village. "Agriculture and cattle ranching grew thanks to government programmes, including the mechanised production of rice" which prompted the deforestation of 3,000 hectares (Macario 2020, 7). Forestry was also thriving:

> In 1970 [a group of ejidatarios] acquired an electric sawmill […] and formed the community forestry company "Aserradero Javier Rojo Gómez". […] The natural abundance of precious woods in Laguna Om's jungle permitted the processing of up to 3,000 m^3 per year during the 1980s, creating a flow of cash that made the population prosper. (Macario 2020, 9)

[i] The National Company for Popular Subsistence (Conasupo) was created in the 1960s to protect vulnerable rural economies. It regulated the prices of basic products and guaranteed minimum prices of agricultural goods and maintained equity in the national market (Castro 2020). The company was dismantled in the 1990s as part of the neoliberal restructure of the economy.

Ranching expanded too. After the rice-growing project failed due to poor planning from central agrarian authorities, the land was converted for pasture and four ranching associations appeared. They built deep wells, extended power lines, and devised water-carrying systems (Ibid.). Similar growth occurred in neighbouring *ejido*s, where rice was substituted by sugar cane to be processed in a brand-new sugar mill. Thousands of hectares were cleared to cultivate cash crops (Mendoza 1997), converting them from jungle to monocultures.

In 1979, Laguna Om's territory was expanded to its current 84,998 hectares and over time the number of *ejidatarios* grew to 485. Meanwhile, wood extraction steamed ahead, rapidly depleting the forest's commercially valuable species. By 1985, there was not enough wood to keep the sawmill going and the community company resorted to buying more from adjacent *ejidos*. Two years later the mill was sold, halting all forestry activities for years (Macario 2020). That event seemed to signal a tipping point for the community amid a changing global economic landscape.

The neoliberal project was taking off in Mexico. Starting in 1982, the government, once paternalistically managing rural life, progressively abandoned the countryside (Osborne 2013). Neoliberalisation of agrarian policy reached its zenith in 1992 when the government of President Salinas de Gortari modified Article 27 of the constitution allowing the privatisation of *ejido*s (Stephen 1994). Through the Programme for Certification of *Ejido* Land Rights (Procede), land that had been communally held for 50 years could now be divided into parcels, converted into private property, and then sold, rented, or traded. The strategy aimed to encourage investments and generate economic growth by putting the countryside in the hands of the free market (Barsimantov et al. 2009). The reform also stopped the Agrarian Distribution of the 1940s, ending the state's role in creating new *ejido*s and overall reducing its responsibilities towards rural communities.

Other policies accompanied the shift. Programmes targeted at peasant populations started favouring poverty alleviation rather than investment in local productive capacity (Merino-Pérez 2004). The prime example was the Programme for Direct Agrarian Support (Procampo), a cash transfer scheme for corn producers that in practice financed consumption

rather than production (Ibid.). Procampo is still active and seen as an icon of failed agrarian policy in Laguna Om. Forestry was also deregulated, halting technical assistance provided by government agencies, an approach replicated in crop production. Further, when the North American Free Trade Agreement (NAFTA) was signed in 1994, Mexican peasants, now devoid of state support, were to compete with highly industrialised and subsidised North American farmers. Consequently, Canadian wood inundated the market, as did cheaper crops from abroad. Rural income declined 70% and food dependency skyrocketed (Ibid.). The impact was so profound that many indigenous farmers joined the ranks of the Zapatista army (Sánchez 1998), prompting the 1994 uprising.

New conservation schemes also followed a neoliberal logic. During that period, conservation efforts largely focused on creating new Biosphere Reserves, protected areas recognised by UNESCO that embodied the concept of sustainable development (Marcareño 2021). These included the Calakmul Biosphere Reserve, established in 1989 among multiple land-use conflicts (Sosa-Montes et. al 2012). Biosphere Reserves were the testing ground for a new conservation model pushed by Ministry of Natural Resources and Fisheries (Semarnap) and the World Wildlife Fund (WWF). The novel scheme introduced cash payments for *ejido*s that suddenly found their land within park borders. It assumed that use by local communities was the main cause of forest degradation and by offering money in exchange for not touching the resources, they favoured a passive attitude towards ecosystems (Merino-Pérez 2004) by disrupting traditional relationships and recasting them as a source of easy – although meagre – monetary income.

Starting from the late 1990s, a host of market-based conservation schemes entered the stage. These included innovative Payments for Ecosystem Services (PES), which environmental agencies considered "a ground-breaking scheme that achieved direct connections between users and providers of environmental services" (Conafor 2019). PES purported to compensate forest *ejido*s for 'services' such as water capture and carbon sequestration, linking agrarian communities with international markets (Garcia-Frapolli 2015). Further, being part of PES programmes was initially made contingent on *ejido*s' participation in the Procede land certification scheme, inciting the process towards privatisation (Osborn 2013).

Further, the government launched the figure of Voluntary Conservation Areas (VCAs), which purported to give rural and indigenous communities the chance of protecting their now vulnerable *ejido*s from infrastructure and industrial development and offered them the opportunity to partner with companies that wanted to mitigate their environmental impact (Peña-Azcona et al. 2021). In sum, new environmental policies offered new ways of protecting the environment by making saving nature a new source of investments.

Other strategies emerged at the same time, among them the controversial programme for Reducing Emissions from Deforestation and Degradation (REDD+) and other private carbon credit arrangements (Osborn 2013). Currently, Laguna Om receives cash transfers from several conservation programmes, including PES. The *ejido* is also in the process of certifying its 35,000-hectare community reserve for selling carbon credits. They have signed an agreement with Mexican firm Toroto, one of several intermediary companies scrambling to convince as many *ejido*s as possible to enter the carbon market. As one of Toroto's operatives told me, "There is now a boom in the carbon credit business in the area. The size of these community forests is something you won't find anywhere else. Many companies are fighting for a share."[4]

Reshuffling land property: Dispossession and 'the wrongly called Tren Maya'

Although some studies suggest that the reform to Article 27 did not have the widespread effects it intended (Morett-Sánchez and Cosío-Ruiz 2017), privatisation of *ejido* land has been the cornerstone of development in the Yucatán Peninsula. Starting in 1992, an intricate network of powerful private investors, corrupt civil servants, and agrarian representatives drove a process of dispossession that aimed to "capture communally owned land at a low price and by any means, legal or illegal" (Torres-Mazuera 2021, 4). *Ejido* land and other national territories with skyrocketing market value were privatised by an "agrarian mafia" that used tactics ranging from deceiving local authorities to violent takeovers employing sicarios (Sánchez et al. 2019; Cacho 2015). Until 2019, 355,304 hectares had been parcelled and appropriated, enabling real estate, agro-industrial, energy, infrastructure, and tourist development in the region (Torres-Mazuera 2021), and sparking numerous environmental

conflicts with indigenous land defenders around the Peninsula (Sánchez et al. 2019). Socio-ecological outcomes have been equally disastrous. Between 2011 and 2018, Quintana Roo had the highest deforestation rate in the country, losing 90,326 hectares of jungle, primarily in the area close to the border with Belize, due to agribusiness expansion (CCMSS 2019).

For 30 years, the Maya Jungle has been the stage of a territorial dispute that weakened *ejido*s, dismembered rural social fabric, and fractured the landscape. The process intensified during the presidency of Enrique Peña Nieto (2012-2018), which saw staggering levels of corruption and several scandals of violent evictions of landowners by businessmen and politicians linked to drug cartels (Torres-Mazuera 2021). Simultaneously, narco-violence multiplied in the state, spreading from the coastal cities to villages in inner Quintana Roo. The crisis peaked recently in Laguna Om when a *narcomanta* (a handwritten sign on a blanket) appeared on a footbridge renaming the village as *Narcolás* Bravo. The sign had the names of over a dozen locals who were allegedly involved in drug trafficking. According to informal interviews conducted for this study, they have been systematically chased and killed by a cartel. Two days before fieldwork started, a woman and her husband were found brutally murdered inside their car, abandoned by the main highway.

There is a new wave of development approaching. Leftist President Andrés Manuel López Obrador (AMLO) is focusing his vision for the Mexican south on *megaproyectos*, large-scale infrastructure projects comprising oil refineries, airports, and other infrastructure corridors. In the Yucatán Peninsula, the government and private investors are building the Tren Maya, a passenger and freight railway line that will connect five states and "detonate sustainable development" (Gobierno de México n.d.) (See Figure 5). Tren Maya is also a "territorial reordering [i.e., management] project" that, AMLO's government claims, will protect nature, create economic growth, improve connectivity, and promote social inclusion in line with the development goals of the United Nations Human Settlements Programme (UN-Habitat). Meanwhile, indigenous groups and other grassroots organisations have vocally criticised a pre-eminently capitalist project that will intensify dispossession processes and bring widespread socio-ecological harms (Grupo de Análisis Ambiental 2020). The 'wrongly called Tren Maya', they say, appropriates indigenous identity to justify "extractive *megaproyectos* that only bring violence and death to our territories" (Desinformémonos

2021). Despite multiple lawsuits and a series of improvised amendments to the original project, AMLO's government aims to finish Tren Maya by the end of 2023. The construction of the section that will go through Laguna Om will begin this year.

Curiously, one of the primary components of the train is conservation, in particular jaguar conservation. PES, VPAs, and ecosystem restoration are all part of the train's so-called mitigation strategies. One of the most publicised, is the Group of Technical and Operative Assistance (GATO, which is also Spanish for 'cat') a jaguar rescue and reintroduction scheme that will have several working stations along the route, including the Calakmul Biosphere Reserve. Additionally, the National Alliance for Jaguar Conservation (ANCJ), a coalition of academics and conservationists, has worked alongside developers to plan over 300 wildlife crossings that aim to reconnect conservation areas already isolated by state highways. If done right, the ANCJ maintains, the train can be an asset for jaguar conservation. "It is a valuable opportunity for ordering anarchic development on the periphery of protected areas," reads one of their communiqués (Ceballos 2018).

Members of the ANCJ, in partnership with WWF are running jaguar conservation programmes in Laguna Om. They also recently conducted the second iteration of a pioneering National Jaguar Census, which puts the jaguar population at around 4,800 individuals, a 20% increase in the last ten years (Ceballos et al. 2021). Approximately 2,000 jaguars live in the Yucatán Peninsula, most of them close to the southern border. And despite habitat loss and other pressures on the Maya Jungle, conservationists argue current strategies are working.

Conclusion

This chapter has provided relevant context to understand the current reality of Laguna Om and how jaguar conservation is intertwined with development in the area. From the small-scale agriculture days in the first half of the 20th century, the region has gone through a series of transformations driven by changes in the global and national economic landscape. Self-supply livelihoods gave way to government-sponsored industrial production and then to the decadence that started with the neoliberalisation of the economy. Simultaneously, a sparsely populated area experienced state-directed migrations that ushered in a conflictive interaction

with non-human nature. The policies and models altered people's relationship with their *ejido*, which went from producing abundant amounts of food and sufficient income to a depressed state where people yearn for the bountiful lost decades.

Conservation evolved along such political economic transformations. At the start of the neoliberal period, new environmental strategies were created not only to protect 'nature', but to do so by opening streams of investment that connect global capital with rural communities. PES and VCAs quickly became a way for *ejidos* to receive money for conserving their resources, while companies could settle environmental scores by paying landowners for their environmental services. Thus, saving nature was made compatible with 'sustainable' economic growth, and jaguars are part of that plan too.

In 2018, representatives of ANCJ and WWF Mexico attended the Jaguar 2030 High-Level Forum at the UN headquarters in New York. They signed the Jaguar 2030 New York Statement, which recommends:

> Mainstream[ing] biodiversity and jaguar conservation into development and sector policies, practices, and investments […] and in this way harness nature-based solutions for achieving national and global sustainable development goals. (ANCJ 2018, 7)

As well as:

> Catalyz[ing] greater investments in nature-based solutions for development challenges by using public resources to incentivize private financing […] such as payments for ecosystem services, subsidy reform, green bonds, and sustainable commodity production that generate social and economic benefits compatible with jaguar conservation. (ANCJ 2018, 8)

Conservation, like everything else in the logic of neoliberalism, is now in the invisible hand of the market. It is the hegemony of finance, investments, offsets, and payments that we now turn our attention to.

Chapter 3 – Theory: The Subtle Art of Selling Nature

For the past 16 years, in a golf resort 90 km south of Mexico City, some of the most recognizable experts of jaguar conservation have gathered annually to talk about their achievements, present their latest breakthroughs, and discuss their perspectives on the future of the species. Posters of regal-looking jaguars welcome attendants to the symposium, featuring alongside the logos of the sponsors that make the meeting possible: the Autonomous National University of Mexico (UNAM), the National Commission of Protected Areas (Conanp), and the globally recognizable World Wildlife Fund (WWF) panda in alliance with Fundación Telmex-Telcel, the non-profit organisation of one of the wealthiest corporations in the country.

The yearly gatherings are part of an effort to systematise studies of the spotted predators. Beginning in 1997 with a long-term project called *Jaguar Ecology and Conservation in the Maya Forest*, researchers of UNAM started joint work to "generate solid scientific knowledge on the ecology and conservation of jaguars, its prey and its habitat, and to develop a long-term conservation strategy" (Ceballos, Zarza, and Cercedo-Palacios 2016, 11). The research campaign later spawned the National Alliance for Jaguar Conservation (ANCJ), a coalition of academics, NGOs, government agencies, and private investors that attempt to articulate "large-scale sustained actions" to save the jaguar from extinction.

This chapter starts by outlining jaguar ecology research done in Mexico over the last few decades, which informs current conservation strategies. That body of literature, however, lacks critical assessments of jaguar conservation programmes which, the next section argues, are intimately intertwined with capitalist accumulation. By following the literature on 'neoliberal conservation', I show how saving nature has become central to incentivising 'green' investments, based on a logic that maintains that conserving the more-than-human requires transforming it into commodities. Lastly, we turn our attention to other possibilities for conservation and the proposals that seek to detach it from the voracious market economy. What we are looking for are the intricate links between protecting nature and capitalism and

ideas of how to break them. Maybe then we can glimpse at more reciprocal relationships an animal that, as it happens, is still a bit of a mystery.

What we know about jaguars

Jaguars are one of the least-studied large carnivores in the world (Colchero et al. 2011). Systematic research of the felines was practically unheard of until a few decades ago, and although they are the third largest cats on the planet and arguably the most charismatic species of the American jungles (Ceballos et al. 2021), they have not been as popular among ecologists as their African cousins. But not everything about them is unknown. There is, for instance, a considerable amount of information about the jaguar's cultural significance (e.g. Morales and Morales 2018). We know they were a hugely symbolic species for Mesoamerican cultures (García-Padilla and López-Esquivel 2019; Wohrer 1999). The Maya considered the spotted cat to be an incarnation of the forces of the underworld, a creature that lived at the fringes of the universe, out of human control (Valverde-Valdés 2005). Also, thanks to sporadic research done over the past century, we know that jaguars have lost around 50% of their original territory (Medellín et al. 2016), and that their numbers have plummeted outside of the still dense Amazonian rainforest (Ibid.). So although jaguars remain something of an enigma, we know much more about them today than we did three decades ago.

In an effort to track and organise jaguar research, Medellín et al. (2016) compiled 586 documents that, since 2000, have dealt with ecology, biology, and the cultural dimensions of jaguars. They found that only 340 explore purely biological or ecological aspects of the species. Almost half of these describe their distribution range, however, they are mostly based on casual encounters or form part of overviews including several species. Nonetheless, researchers have made contributions that are particularly significant to Yucatán Peninsula's changing landscape. Chávez and colleagues (2016) determined jaguar distribution in the region and principal threats, namely habitat destruction, retaliatory killing by cattle ranchers, poaching, prey depletion, and diseases transmitted by livestock. Chávez, Ceballos, and Amín (2007) described the effects of subsistence hunting of jaguar prey and priority areas for conservation. Araiza, Ceballos, and Chávez (2007) studied the impacts of infectious diseases in the Calakmul area, while Conde and collaborators (2010) revised differences in how males

and females use their territory. Other researchers have scrutinized the effects of road infrastructure (Zarza, Chávez, and Ceballos 2007), the importance of maintaining genetic diversity (Roques et al. 2016), and the possibilities of reconnecting landscapes using wildlife crossings (Colchero et al. 2011). Further, researchers have been able to determine minimum viable areas for jaguar populations, elucidate prey preferences, and monitor transboundary migrations within the Maya Jungle (Medellín et al. 2016; García-Anleu et al. 2020).

This knowledge has crystallised in a single, nationwide conservation plan. The ANCJ developed a National Jaguar Conservation Strategy, a "roadmap for short, mid, and long-term goals and actions to promote conservation of the jaguar and its habitat in Mexico" (Ceballos, Zarza, and Cercedo-Palacios 2016, 9). The strategy aims to articulate the work of multiple actors around nine main components: 1) Priority areas and biological corridors; 2) Jaguar and prey monitoring; 3) Human-jaguar conflict; 4) Protocol of jaguar attention; 5) Legal reinforcement; 6) Highway and road infrastructure; 7) Environmental education; 8) International cooperation; 9) Community management (Ibid.). Further, it divides the national territory into five ecoregions, each with priority conservation areas, wildlife corridors, and policy recommendations that guide the design of new conservation projects (Gerritsen and Esparza 2019). The idea is to bring multiple actors together to take science-based actions that are significant for the long-term viability of the species.

Perhaps the central foundation of the National Conservation Strategy is the pioneering National Jaguar Survey, the first country-wide census in the world (Ceballos et al. 2021). Drawing on field data collected using camera traps in 2010 (13 sites) and 2018 (11 sites), and combining it with complex ecosystem viability models, the Survey estimated the population and distribution of Mexican jaguars. The results were encouraging. They found jaguar populations in Mexico have grown 20% on average between 2010 and 2018. This increase happened notwithstanding adverse conditions:

> The 2010-2018 increases despite human population growth, expansion of infrastructure, illegal hunting, and other threats, may be explained by a combination of factors. For example, there has been an increment in tropical land cover with suitable jaguar habitat, especially in Western Mexico; protection of nature reserves such as biosphere reserves; payment of environmental services to landowners located on jaguar habitat; law enforcement; community-based conservation and education; and cattle insurance for jaguar predation. (Ceballos et al. 2021, 16)

Jaguars, the study found, still exist throughout most of their historical range, although confined to the remaining patches of fragmented forested land and relatively inaccessible regions.

This body of research is, no doubt, ground-breaking. However, it has a curious gap. Despite the growing emphasis on community-based conservation and local participation (Álvarez G., Gerritsen, and Gómez Llamas 2015; Nuñez et al. 2020), there is little written about local perceptions of jaguar conservation *programmes and policy*. Sources of human-jaguar coexistence cited by Mexican ecologists often include studies done abroad, primarily in Brazil (Zimmermann, Walpole, and Leader-Williams 2005; Conforti and Azevedo 2003). And although scholars have documented conflicts between local communities and conservation mechanisms such as Biosphere Reserves (Halffter 2011; Sosa-Montes, Durán-Ferman, and Hernández-García 2012) there is not nearly enough ink exploring the political ecology of jaguar conservation and alternatives to mainstream approaches in the country.

Some authors have written thorough histories of national conservation policies. Merino (2004), for example, revised how conservation and forestry management developed in the country with a special focus on Quintana Roo. Simonian (1995) wrote a book called *Defending the land of the jaguar: A history of conservation in Mexico* where, despite the title, jaguars feature little and rather focuses on federal conservation policies. Moreover, the text makes some unfortunate moves like calling indigenous peoples "the pre-Conquest Indians of Mexico", stating that "poor people cannot afford to protect their natural resources" (Simonian 1995, 1), and regarding members of the Mexican Green Party which has famously promoted mineral extraction in protected areas (Mariscal and Guerrero 2016), as devote environmentalists.

Other work has focused on the relationship between rural communities and jaguars. Gerritsen and Esparza (2019) further studied the local perceptions of jaguar conservation in western Mexico, with results that are strikingly similar to what fieldwork for this thesis found. Nonetheless, their actor-based theoretical approach analyses the participants' concerns within the prevalent institutional conservation framework and does not connect them to the broader political economy, also omitting crucial power dynamics. Meanwhile, García and Esquivel (2019) linked the current state of jaguar populations to murderous capitalist

expansion, but they did not go deep enough in their critique of conservation as part of an extractive economy.

There is room, then, for a political-ecological approach that not only places jaguar conservation within the capitalist political economy but also shows how the 'charismatic species', the 'surrogate for conservation efforts' is increasingly abstracted as a commodity or marketed as an incentive for selling conservation products. This is happening at a point in time where infrastructural expansion in southern Mexico is ushering in a new phase of market-state-community relations. Saving jaguars is a business, and conservation in its current form is a cog in the same industrial machinery that is driving the species to extinction.

Capitalism will save nature

There is a common misconception that conservation is the antithesis to 'unsustainable development'. The media, fond of heroic narratives, portrays it as the urgent mission to preserve biodiversity, landscapes, and wildlife – a fight against the destructive human activities that degrade nature. However, conservation is increasingly entangled with economic accumulation and profiteering. As Büscher and Fletcher (2020, 122) write, "capitalism and conservation have intrinsically co-produced each other", meaning that there is no conservation without capitalism and, more importantly, capitalist expansion requires conservation. We can see this entanglement in the words that often accompany conservation. 'Development', 'growth', and 'business' models now count conservation as key component to make their operations 'green' and 'sustainable' (Brockington and Duffy 2011). Moreover, the global political economy has created strange paradox in which selling nature seems to be the only way to save it (McAfee 1999). As Sullivan (2009, 18) explains it:

> The understanding is that if we just price the environment correctly – creating new markets for new 'environmental products' […] then everyone and the environment will win. If nature can be rationally abstracted and priced into assets, goods and services, then environmental risk and degradation can be measured, exchanged, offset and generally minimised. (Sullivan 2009, 18)

By turning nature into commodities that purportedly channel financial resources dedicated to protecting nature, capitalism looks to compensate its negative environmental consequences. In short, capitalism presents itself as the solution to capitalist harm.

David Harvey (2014, 7) defines capitalism as "any social formation in which processes of capital accumulation are hegemonic and dominant in providing and shaping the material, social, and intellectual bases for social life." This hegemonic structure has moulded conservation over time. In Europe, it once served to enclose rural spaces and force peasant communities into the cities, forming an urban proletariat (Fletcher and Toncheva 2021). In the United States, conserving aesthetically pleasing, awe-inspiring landscapes justified pushing the conquest frontier by making national parks out of appropriated Native American land (Cronon 1999). Revered American conservationists like John Muir even thought 'Indians' should be either dead or civilized by force (Purdy 2015), revealing the profoundly colonial and racist origins of the environmental movement.

The evolution of conservation in Mexico is also intrinsically linked to the evolution of capitalism (Merino-Pérez 2004). Along with changes in the global economic landscape, conservation has moved from strict protected areas to conservation-development programmes aimed at rural communities, and on to market-based conservation instruments (García-Frapolli 2015). As capitalism seeks to remove boundaries for transnational capital and device new mechanisms to capture value from new resources, Payments for Ecosystem Services (PES), carbon markets, and other similar schemes have bolstered a logic that reduces complex human-nonhuman interactions to a supply-and-demand relationship aimed at generating private profit (Sullivan 2009). This reasoning transforms nature into two artificial categories: 'natural resources', an entity external to humans that is there to be exploited and managed for our benefit (Sullivan 2017), and 'natural capital', which should be protected for the 'environmental services' it provides (Büscher and Fletcher 2020). In other words, modern mainstream conservation separates humans from nature and construes the latter as a commodity – something that is worth money, and therefore should be preserved because it generates more money, whether for local communities or for the organisations that purport to defend it.

Neoliberal conservation

A growing body of literature has examined a trend that scholars have termed 'neoliberal conservation' (Sullivan 2006; Igoe and Brockington 2007; Büscher et al. 2012; Dunlap and

Sullivan 2020). Succinctly put, this is the escalation of value capture and capital accumulation through the conservation of nature. As the neoliberalisation of the world economy tends towards the removal of boundaries for transnational capital, facilitating investments, and reaffirming the preeminent role of the market, conservation has followed the same drift. New market-based instruments (MBI) make nature legible to global trade, attempting to overcome capitalism's environmental contradictions while satisfying its need for perpetual expansion (Büscher and Fletcher 2015; Fletcher and Toncheva 2021; Büscher 2021). Conservation, Büscher and Fletcher (2015, 283) argue, is so integral to the world economy that it has potentially ushered in "a new 'phase of capitalism' as a whole, imbued with a productive form of power that shapes new joint environmental and accumulation possibilities." They call this process 'accumulation by conservation', where the "public, private and non-governmental sectors seek ways to turn the non-material use of nature into capital that can simultaneously 'save' the environment and establish long-term modes of capital accumulation." (Ibid, 273) This process requires the creation of financial instruments that liberate capital from investments in material resources and recasts nature as a set of abstract, easily tradable products (Büscher and Fletcher 2015; Sullivan 2009).

Perhaps the most obvious example of this financialisation of nature are carbon offsets. Essentially, offsetting means that harm done to nature in one place can be compensated by 'preserving' it in another. Forest destruction here is amended by protecting it elsewhere, and carbon emitted in factories can easily be captured by some jungle thousands of kilometres away. This global arrangement, however, requires a series of conditions. Firstly, a sort of unifying 'god trick' (Haraway 1988) that conceives the world as a uniform whole, detaching conservation from any one place and allowing the nullification of environmental damages by purchasing green assets anywhere on Earth. Thus, the value of nature – multiple knowledges, practices and experiences of relating with the non-human (Sullivan 2017) – is reduced to units of accounting – equivalent tons of carbon – that can be neatly priced and exchanged in bespoke markets. Nature is thus stripped of any intrinsic or relational value and transformed into money, the universal equivalent that makes nature legible to capitalism (Büscher and Fletcher 2020). Cavanagh and Benjaminsen (2014, 57) further analyse the 'relational' nature of carbon offsets, which depend on 'translations' ivolving "measurement, certification, and accounting technologies in order to assure the consumers […] that they are, in fact,

purchasing something that exists." Further, they entail "the (often transnational) construction of relationships between those who emit, those who sequester, and the ecosystems and technologies enrolled by both." In other words, cetrifiers rely on robust accounting methodologies to assure polluters that carbon is being captured, and strike deals with forest-owning communities who are supposed to receive monetary benefits. Techologies like interactive websites and apps then serve to legitimate the otherwise remote arrangements (Ibid.). Technological developments such as blockchain[ii] are now supercharging this process by integrating ever more land – and the communities that own it – with global markets (Büscher 2021), something that *ejido*s like Laguna Om are already experiencing.

Further, for conservation products to be profitable, they need to be cheap. This means finding suitable places for deploying cost-effective conservation projects. Perhaps unsurprisingly, such conditions are most readily found in the so-called developing world, where land is inexpensive, natural resources are available, and populations can be convinced or coerced into accepting often disadvantageous deals (Dunlap and Sullivan 2020; Aguilar-Støen 2015). Moreover, state intervention is instrumental in facilitating investments via creating or slashing regulations and devising market-oriented policies that encourage partnerships between local communities and global capital (Peña-Azcona et al. 2021; Dunlap and Sullivan 2020), Thus, profits from development projects are kept in rich nations, while:

> displacing environmental impacts of these activities to less-developed areas where they can be offset most cheaply. […] In short, accumulation by conservation entails (or more strongly, depends fundamentally upon) taking advantage of structural inequality within the world-system. (Büscher and Fletcher 2015, 288)

This mechanism has the added advantage of contributing to a narrative where wealthy benefactors – who are also by far the world's primary polluters (Harvey 2020)– work to preserve the last untouched tracts of nature, protecting them from growing rural populations. Narratives of local degradation (Benjaminsen and Bryceson 2012) and the authority of

[ii] Blockchain is a decentralised computer system that records transactions that are maintained across several computers linked in a peer-to-peer network. It is a shared technology that facilitates the process of sharing business information, increases transaction fidelity, and streamlines tracking assets in a business network (IBM n.d.). It is the technology that allows cryptocurrencies to exist.

environmental experts (Fairhead and Leach 1995; Büscher and Fletcher 2020) have long been ingredients of what Fairhead and colleagues (2012, 237) call 'green grabbing', or "the appropriation of land and resources for environmental ends." Green grabbing is flexible and can entail the material dispossession of land to establish, for example, nature conservancies (Ogada 2019), or "the restructuring of rules an authority in the access, use, and management of resources" (Fairhead 2012, 238). Carbon credit certifiers, for instance, demand certain guarantees. Primarily, that there will be no tree cover loss in patches of forest that their clients have remotely purchased, thus implicitly or explicitly restricting forestry activities that constitute arguably sustainable local livelihoods (Suarez 2021). Moreover, they require "measurable, science-based conservation benefits" (CPIC n.d.), or else, the mercantile valuation of the forest by a hegemonic way of knowing pushed by the authority of Western-educated experts (Brockington 2009). Any other form of value assigned to nature is therefore made irrelevant against the science-based price tag designed to bring investors "at-scale financial returns" (CPIC n.d.). The increasingly agile movement of 'green capital' has further streamlined environmentally motivated land grabs that can be done remotely (Fairhead 2012), appropriating nature through transactions efficiently done online. Moreover, based on the offsetting logic, they green grabbing can accompany development projects that pass the environmental costs of extraction down to small landholders, who are persuaded to accept new rules on their territory and resources.

Environmental NGOs also play a key role in promoting environmental investments. Well-organised networks of investment funds, universities, and environmental NGOs are dedicated to "overcoming the barriers to scaling private, return seeking capital in conservation" (CPIC, n.d.). Conglomerates such as the Coalition for Private Investment in Conservation (CPIC) count among their members famous non-profits that have partnered with "many of the most environmentally destructive corporations in the world" (Büscher and Fletcher 2020, 42). As part of the efforts to make capitalism 'green', NGOs can perform multiple functions, from manufacturing consent for top-down policies (Osborne 2013) to violently enforcing evictions and converting communal land into private-funded nature reserves (Ogada 2019). Their image also legitimises the good environmental intentions of the same companies that draw huge profits from disastrous extractive projects.

Offsetting, financialisation, green grabbing, and the increasing alignment of NGOs with corporate interests are all facets of neoliberal environmental governance that follows colonial lines. Dunlap and Sullivan (2020, 554) recognise in these commodifying operations a "process of colonization, state territorialisation and security policy" they call 'accumulation-by-alienation'. Their concept highlights the complementary material and psychological appropriations that accompany market-based conservation instruments. Accumulation, they argue, stems from fomenting 'relational deficiencies', or put another way, breaking up meaningful links between people and with non-human nature, which allows the hyper-individualistic neoliberal logic that substitutes all relationships for transactions to settle. Simultaneously, they draw attention to a "poverty-pushed market-based environmentalism" (Ibid., 563) that acts as an instrument to permeate the rural global south with neoliberal mechanisms that commodify nature and create clients. This strategy

> might be usefully conceptualized as localized or small-scale 'disaster capitalism' through which dispossession, cultural fragmentation and poverties are mobilized as gateways or opportunities to implement neoliberal expansion in local contexts. (Dunlap and Sullivan 2020, 564)

In other words, people want a form of development. They long for the promise of greater material prosperity, jobs, better health services, and overall well-being. Market-based environmentalism, in turn, takes advantage of these objective and subjective vulnerabilities to expand conservation programmes that reinforce existing power structures, deepen commodification of nature, and foreclose alternatives of "non-market- oriented care for (and restoration of) ecosystems and socio-ecological abundance" (Dunlap and Sullivan 2020, 546). While colonialism is "premised on exploitation of colonised peoples, their territories and resources" (Domínguez and Luoma 2020, 2), which formerly required the physical separation of people from their land, neoliberal environmental governance builds on post-colonial contexts of profound structural violence to advance 'ecological conquest' in more subtle, not explicitly violent ways[iii] (Dunlap and Sullivan 2020). Framing these advances as

[iii] There are instances where neoliberal governance is also exceedingly violent against local populations in ways that closely resemble colonial regimes. (Survival International 2019) Although this is not the case in Laguna Om, it is revealing that the same environmental organisations, namely the WWF, can deploy a variety of tactics according to local contexts.

‘mitigation strategies’ for other kinds of more overtly harmful development, such as new infrastructure, further legitimizes the spatial and psychosocial management they involve.

Infrastructure, however, can be its own kind of colonization. In their study of megaprojects –large-scale infrastructure development – in Mexico, Dunlap and Correa (2021) detail what they call ‘infrastructural colonization’, the reorganisation of environments to accommodate the existence of techno-industrial infrastructure. Such rearticulation has ecological and social dimensions. The former refers to the “calculus of human and nonhuman casualties in spatial interventions”, or else, what and who will be sacrificed to make way for so-called development. The latter involves a series ‘enchantments’ that include the promise of economic opportunity, convenience, connectivity, etcetera (Dunlap and Arce 2021; Dunlap 2021). Researchers in Mexico have also linked megaprojects, including Tren Maya, to colonial patterns of dispossession (Grupo de Análisis Ambiental 2020; GeoComunes, Torres-Mazuera, and Godoy 2020). Even the use of the word ‘Maya’ to promote “murder projects” has been strenuously opposed by indigenous collectives who perceive it as a jibe to their identity (Desinformémonos 2021). In sum, the infrastructure corridor advances a form of development that will profoundly impact the socio-ecological dynamics of rural and indigenous communities.

By following its connections with Tren Maya, the following chapters will show, jaguar conservation in southern Mexico can be understood as part of a two-pronged techno-industrial, neo-colonial offensive. It builds on claims to hegemonic knowledge and structural inequality while solidifying existing power dynamics on multiple levels. Further it serves to make a destructive form of development more palatable. The call for decolonising conservation is then highly relevant to address these deep-seated issues. However, decolonisation is not a straightforward affair.

Conviviality, power, and decolonising conservation

To explain how colonial structures have long outlived the processes of territorial domination by Western powers, decolonial scholars distinguish between colonialism, which ended with the independence of the last colonies, and what Anibal Quijano calls ‘coloniality’, “the

diversity of practices that derive from the matrix of power created by colonialism and are still at work within contemporary, post-colonial societies" (Álvarez and Coolsaet 2020, 52). The matrix manifests in modern institutions that govern, among other interactions, "the relationships between peoples and nature, and among the former in regard to the latter, especially with regard to the ownership of the resources of production" (Quijano quoted in Álvarez and Coolsaet 2020 52). Coloniality dehumanizes people and objectifies nature. And although not always overtly violent, neoliberal conservation still uses this scaffolding to enable capitalist expansion. Backed by the authority of science, it makes all other forms of knowledge and alternative relationships to the land inferior, unimportant, and only interesting as an object of study.

How to detach conservation from that colonial structure is a growing debate. Krauss (2021, 2), for instance, recognizes the urgency to "address and move beyond abiding unequal dynamics rooted in colonial pasts and perpetuated through socio-ecological injustices to the present." Mabele and colleagues (2021, n.p.) further posit that "engaging in decolonial conservation requires a radical shift in focus of conservation efforts towards the myriad of vibrant forms of engaging with and knowing the world around". Other authors have traced the links between hegemonic ways of knowing and pointed towards alternatives rooted in non-Western worldviews (Domínguez and Luoma 2020; López Barreto 2021; Sullivan 2017). In other words, decolonising conservation requires abolishing the superiority of Western science to make space for other ways of knowing and relating to more than human nature.

One of the theoretical proposals that seeks to overhaul conservation practice in line with decolonial movements is 'convivial conservation' (Büscher and Fletcher 2020). It follows Ivan Illich's (1973) idea of conviviality, which promotes interdependence, voluntary simplicity, and democratic decision-making as alternatives to individualised profit and industrial techno-structures (Krauss 2021; Kerschner et al. 2018). Based on these principles, convivial conservation envisions a post-capitalist paradigm structured around five main elements: 1) Promoted areas that, as opposed to protected areas, are "fundamentally encouraging places where people are considered welcome visitors, dwellers or travellers rather than temporary alien invaders upon a nonhuman landscape" (Büscher and Fletcher

2020, 265); 2) Celebrating human and non-human nature to revalue diversity, promote conviviality, and factor in political economic processes that tie people and more-than-human together. 3) Transit from touristic voyeurism to engaged visitation, emphasizing "long term *democratic* engagement" (Ibid., 273, emphasis in original) rather than elite eco-tourism; 4) Refocusing on 'everyday environmentalisms' that celebrate nature in its splendour and mundaneness; 5) Substituting privatized expert technocracy with common democratic engagement "focused on nature-as-commons and nature-in-context rather than nature-as-capital." (Ibid., 277). In sum, convivial conservation is an appeal to imagine a form of conservation that "is *not* geared towards eternal quantitative growth and accumulation" (Ibid., p.280, emphasis in original), which requires revising the role of science in its ability to render nature legible to the market and reinforce colonial structures.

Haraway (1988, 581), for instance, argues for challenging the notion of objectivity, the ability to 'see from nowhere', free of bias and accountability. Such claim allows science, which is "tied to militarism, capitalism, colonialism, and male supremacy", to make its form of "manufactured knowledge" (Ibid. 577) superior to every other way of knowing. Alleging objectivity, moreover, gives Western science the power to decide how nature is known and valued everywhere. Further, Tsing (2012) posits, science is obsessed with scalability, the capacity to expand indefinitely by designing methodologies and protocols that read nature as a series of homogenous units. Think of identical pines in an industrial plantation (Tsing 2017) or units of carbon absorbed by a forest. Reducing nature to elements devoid of meaningful relationships allows science to transform it into a bundle of products ready to be bought and sold at market value. It is necessary then to reconstruct relationships, to relocate knowledge, and rebuild the ties between the nature we know and the subject who knows it. If 'objective science' is a tool for governing and commodifying, then locatable and critical knowledge can be "potent for constructing worlds less organised by axes of domination" (Haraway 1998. 585). These ideas echo voices in the decolonising conservation literature that advocate moving away from hegemonic epistemologies and making space for "the myriad of vibrant forms of engaging with and knowing the world around us that have been developed by a multiplicity of peoples and cultures around the globe" (Mabele et al. 2021, n.p.). Other ways of knowing mean engaging with different values and different relationships that are not mediated by the market, and are thus incompatible with capital accumulation.

Yet, as she examines the decolonial potential of convivial conservation, Krauss (2021) warns against romanticising everything 'local' and paying attention to power asymmetries that manifest within communities and households. Failing to do this can lead to idolising 'community´ and overlooking important differences at the micro level and how they connect with the broader political-economical context. In other words, communities are not homogenous. There are power structures in place that profoundly condition how they interact within and with the wider political context. Keeping this in mind is crucial for examining disparate rights in the access to land, dissimilar influence in decision making processes, and struggles against the capture of power by local elites.

Looking at such disparities though the lens of Anibal Quijano's (1999, p. 141) 'coloniality of power' further brings light to dominant groups' willingness to "identify their own interests with the dominators of the Eurocentric world," which entails a "historical-structural dependency […] to hegemonic Eurocentric knowledge." Quijano shows that, even within subjugated societies, elites will adjust their actions to fit the wider power structure that keeps the local hierarchy in place, even if that means keeping their own oppressed position in the broader context. This is useful in two ways. Firstly, to recognize global power dynamics replicating in local socio-cultural spaces. And secondly, to see the ease with which experts, possessing objective scientific knowledge, gain an upper hand in negotiations with rural communities, who find themselves at an instant disadvantage.

Simultaneously, Quijano opens the space for decolonial actions to emerge in forms that are perhaps not easily distinguishable:

> Recognising a dominant pattern in intersubjective and material relations within a society at a certain point in time, does not equate to not acknowledging the existence, or rather the co-existence, in the same history and the same socio-cultural space, of other patterns, even of elements not clearly placed within a discernible pattern and that are not only integrated to the dominating pattern but are also different, conflicting, and alternative. (Quijano 1999, p.146)

Actions that challenge the dominant structure manifest in a messy, often contradictory fashion. Resistance can coexist with other elements that live within or even reinforce dominant structures. Nonetheless, they are there – unconventional forms of interacting with nature, different ways of valuing the more-than-human, motivations for healing people's

relationship with the land that are not legible to the market, nor can be neatly placed in accounting spreadsheets. Decolonising conservation is, then, an untidy, disorderly process. However, if alternatives to neoliberal conservation are to be found, if we are to transition from money value to convivial value, these conflicting elements might give us a clue as to where a viable alternative that emerges from local concerns might begin. Maybe jaguars can aid this reconstruction too.

Conclusion

This chapter offered an overview of jaguar ecology literature and placed this thesis among current research that, so far, has not sufficiently engaged with critical social science perspectives to evaluate jaguar conservation programmes. Later, it provided the theoretical foundations for such critical assessment, navigating through a body of literature that examines market-based biodiversity conservation and its relationship with the capitalist political economy. Finally, it finds in conviviality and decolonial scholarship alternatives to neoliberal conservation, or in other words, possibilities for creating a new form of conservation that does not depend on nor advances harmful agendas of economic growth and accumulation.

We are used to thinking of biodiversity conservation as a barricade against man-made destruction. If human activities are harming nature, then conserving it must be good. However, once we recognise that the strategies that ostensibly defend nature from 'us' are part of the system that has created the environmental crisis, the story gets much more complicated. Upon closer examination, what we find is a grid of financial instruments, state and private institutions, policies, discourses, and actors that operate conjointly through colonial structures to advance the enclosure of nature. The actions of that network are intensely experienced by rural populations, who are disproportionately targeted by environmental interventions (Büscher and Fletcher 2020). The following chapters engage with those experiences. They get close the jungle and attempt to understand the realities that neoliberal jaguar conservation influences from the participants' point of view. How to achieve that understanding is a matter of selecting the appropriate tools and remaining vigilant of one's own role as a researcher. Before looking for jaguars, we need to stop and think about the methods this sort of research entails.

Chapter 4 – Methods: Looking for Jaguars

The heat was unbelievable. Our clothes, covering everything up to our wrists and ankles, were drenched in sweat. Even my hat was dripping. But when you are walking in the jungle, risking dehydration is preferable to being covered in ticks or touching the wrong plant. “It almost got you!” said one of the women in the group as I graced the spines of a *chaya de monte*, a slender, green-stemmed vine with handsome leaves. Its thorns are said to be so poisonous that they will have you burning up with a fever, begging for the itch to stop. Mosquitoes were excruciating too. As soon as we stopped to take a break, they would swarm by the hundreds, biting effortlessly through two layers of fabric. Yet, everyone was smiling. As we walked around the lagoon, tiptoeing on muddy trails close to the edge, one of the group members had fallen into the water and had to cling to his backpack for flotation. But not even this dampened their spirits. The humid atmosphere was inundated with perspiration and laughter.

I had been invited on one of the rounds of the Grupo Jaguar Community Guardians, a local surveillance group that patrols Laguna Om’s forest area. And although the team’s primary mission is to report illegal hunting and logging, a potentially dangerous affair, the ambience was that of a weekend hike with friends. There was even food and drink at the end. It was also an ideal scenario for participant observation. Carefree exchanges became political deliberations. Concerns were clearly voiced, and people were interested in me, a nosy researcher, taking notes of what was *really* going on in the *ejido*. As they talked, now relaxing under the *palapa* – a palm leaf structure – of a rudimentary visitor centre, it felt like research had finally started, one week after setting foot in Laguna Om. I arrived in Nicolás Bravo on 8 September 2021. A spacious bedroom with a bathroom, air conditioning and the prodigious ability to be perpetually full of mosquitoes was home until 30 October 2021, one week shy of the two-month milestone. In that time, I compiled hundreds of pages of field notes, including informal interviews, and 16 semi-structured interviews. Research design comprised three main elements: participant observation, semi-structured interviewing, and analysis of secondary sources, such as management plans for protected areas and reports of

conservation work. Other sources such as newspaper articles and public registers were used to triangulate and corroborate the information obtained through interviews.

This chapter will discuss in detail each element of the research design. It begins by defining participant observation and, through the questions that guided research, explain why it was chosen as the core method for this project. It explains the relevance of the method for conservation research, sketches out the places and situations where I participated, and explains the process of data collection. The chapter then moves on to semi-structured interviews, the main complement to participant observation, to then outline the process of data analysis based on the tenets of naturalistic inquiry. The last three sections are conversations around positionality, the decision to engage with marginalised voices, and a discussion of ethnography itself, including the troubles of learning from marginalised voices. Some final reflections of my time in the field round up a chapter that, if anything else, is full of gratitude to the people and a place that made me feel welcome.

Gathering stories

I had been to Laguna Om before. I was there in 2019 doing research on jaguar conservation for a project that never came to fruition. However, after that first trip where I followed ecologists around and observed the interactions between the researchers and the local people, I was left with a question that did have a straightforward answer: *Why do rural communities in the Southern Yucatán Peninsula choose to participate in jaguar conservation programmes?* That central research question guided the rest of this research project and, from the start, the goal of travelling to Laguna Om despite the ongoing Covid pandemic was to record as much of the local's perspectives as possible. I set out to talk to people who worked in conservation, who took part in the decision-making processes in the *ejido*, who had seen jaguars, and whose livelihoods depended on the same landscape as the big cats. More questions would certainly emerge, such as: What is the nature of community-jaguar relationships? Do communities share the same values regarding wildlife as conservationists? Do they feel their needs and concerns are being addressed by conservation programmes? Do they recognise alternatives to current conservation models? Answering these queries required a method that allowed the issue to be understood from the participants' point of view.

The base component of the research design for this project was participant observation, "a way to collect data in naturalistic settings" (DeWalt and DeWalt 2011, 2). It is a means for gathering stories, thoughts, and observed actions that can be interpreted to write accurately about a certain society. Simply put, participant observation – the basis of anthropological research (Ingold 2014) – seeks to understand a certain reality from the participants' perspective (O'Leary 2017). The method, Ingold (2014, 385) argues, should be distinguished from ethnography. He defines the latter as writing about people. It is the craft of describing while "allowing a real historical agency to the people who figure in" our descriptions. Participant observation, in turn, is a "way of working" based on "skills of perception and capacities of judgement" (Ibid., 387). Observation, he abounds, means "to attend to persons and things, to learn from them, and to follow in precept and practice". Thus, this study followed the main points DeWalt and DeWalt (2011) detail in their discussion of the method: living in context; actively participating in daily, routine, and extraordinary activities with people who are full participants in that context; using everyday conversation as an interview technique; informally observing during leisure activities; recording observations in field notes and using both tacit and explicit information in analysis and writing.

Other scholars have emphasised the need to evaluate conservation programmes from an ethnographic perspective. West and Brockington (2006, 610), for example, argue that environmental policies are often implemented with different degrees of virtualism. In other words, schemes are designed and applied remotely by experts who "omit the role of people in forging these landscapes". Thus, an anthropological perspective is required to gain a deeper understanding that allows to co-develop strategies with local populations. Likewise, García-Frapolli and colleagues (2009, 721) posit it is urgent to recognise "different actors perceive different realities, and have differing environments, resources, experiences, values, cultures and livelihood strategies" which cannot be grasped from afar. In a talk with a conservation scholar, I asked why conservationists seemed reluctant to engage with local culture and politics. "It is not our topic. We don't know how to do it, nor do we have an interest in getting involved in things that are not our business," they said. (Ceballos GDL)

This research is thus filling an important gap in the way conservation is understood and designed.

The venues where I conducted participant observation were diverse. They include the *ejido* assembly, informative meetings for carbon credit and forest management projects, an ecology field research station, religious events, working days on crop fields, surveillance trips to the *ejido's* forest area, communal work dedicated to the maintenance of public spaces, rendezvous at local eateries, baseball games, Alcoholics Anonymous meetings, and casual gatherings in participants' homes. Informal chats naturally developed during observation and turned into informal interviews, described by O'Leary (2017, 751) as engaging in "rich informative conversation". Lively exchanges developed from casual chats and often, when I asked for permission to take out a notebook and start scribbling down their words, people would be even keener to share their thoughts, unexpectedly happy to have them recorded on paper. Frequently, conversations turned into lengthy monologues, which I encouraged with verbal and nonverbal cues to expand on interesting topics.

Information obtained was written on fieldnotes, "the primary method of capturing data from participant observation and informal interviewing" (DeWalt and DeWalt 2011, 157). Field notes were recorded chronologically, first jotted on notebooks and then extended on computer files to register to the highest possible detail anything from mundane observations to casual conversations. They were later encrypted and uploaded to a secure server. Although the core of them is transcribed in Spanish, some were written in English – both jot notes and field notes – if they contained potentially sensitive information. In some cases, names were omitted from the notes, especially following explicit requests by participants.

Field notes were then read and re-read to guide further observation and interviewing. Preliminary reflections and theories were also drawn directly from field notes and annotated on the margins of the digital documents in the form of analytic notes (DeWalt and DeWalt 2011). These not only contributed to developing a better understanding of the context while still in Laguna Om, but they were also useful for constructing arguments during the writing stage. Further, they are part of an audit trail (Ibid.) to trace conclusions back to the source and served to, now with some emotional and physical distance from the field, reflect further on my roles as a researcher.

Engaging in conversation

Laguna Om is used to researchers poking around. Many biologists, anthropologists, forestry experts, archaeologists and other scientists have found the *ejido*, with its vast jungle and undiscovered Maya constructions, ideal for their work. For these newcomers, it is customary to meet with the *comisario*, the elected representative of the *ejido*, as their first point of contact with the community and to obtain permission to carry out their intended inquiry. So, on the second day of fieldwork, I introduced myself and carried out a semi-structured interview with the *comisario.* Many more would follow.

Interviewing for this research project, however, began almost a month before fieldwork proper started. Preliminary video-call conversations with local academics working in conservation shed light on the inner workings of the community and provided crucial contacts for the later stage. Once in the field, interviewees were chosen for their relevance in answering the central research question. In total, I carried out 16 semi-structured interviews with different actors that can be categorised as follows: members of local governing bodies (2), members of local conservation groups (3), local academics (1), current and former employees of jaguar conservation programmes (3), cattle ranchers affected by jaguar predation (3), local youth leaders (1), and external conservation experts (3). Snowballing, which Bryman (2016, 415) defines as the process where "sampled participants propose other participants [who in turn] suggest others and so on," was also employed to choose interviewees. With its 3,650 inhabitants, Nicolás Bravo is a tight community bound by kinship, friendship, and other kinds of relationships. In other words, people know each other well, which meant that even if someone was not directly relevant to the project, they would often be able to recommend someone else I could talk to.

Semi-structured interviews allow the researcher to "start with a defined questioning plan but shift in order to follow the natural flow of the conversation" (O'Leary 2017, 749). They are carefully outlined beforehand but leave room for improvisation if unexpected relevant information appears. Given the differences between the interviewee's roles in the community, each questionnaire was crafted for a specific actor. The goal was to learn as much as possible of their uniquely located point of view, which required questioning to be

nimble and customised for individual interactions. During the research design stage of the project, I developed two core interview guides – one for local participants and one for conservation experts. For example, some of the questions for locals included: When and why did you begin participating in conservation programmes? Have you noticed any changes in the community since the community forest was declared a Voluntary Conservation Area? Have you had any contact with the biologists who work with jaguars? What is your opinion about having jaguar conservation work in the *ejido*? What do you expect will happen with the arrival of Tren Maya? These were useful for keeping conversations coherent and were adapted, as mentioned before, for specific actors. Also, some queries such as place of origin, occupation, owning or not a plot of land, and having come in close contact with jaguars were invariably part of the conversations. Conversely, experts were questioned about conservation funding, collaborating with local people and how several programmes were connected to one another.

On average, semi-structured interviews lasted between 45 minutes and one hour. Most of them were recorded following participants' consent. They were transcribed for coding and the audio was stored for further reference. Occasionally, participants asked me not to publish their names or not to be recorded. To protect participants' integrity and follow the recommendations of the Norks Senter for Forskningsdata (NSD), all informants will remain anonymous except for two participants who gave explicit consent to be identified.

All interviews with community members of Laguna Om were done in person, except two, which were done over the phone. External conservation experts, who were either not in the same area or could more easily be reached by other means, were also done remotely. In many cases, follow up interviews were conducted to further discuss information gained from initial conversations. Sometimes, later informal exchanges would shed new light on a previous, more formal interview. Trust developed into openness and information emerged in the same messy, unpredictable way that human relationships grow. Interviews with experts were somewhat different from interactions with local people. They were not directed primarily at knowing their opinions of conservation – which are well-known – but rather at understanding the workings of environmental bureaucracies and NGOs active in Laguna Om. They aimed

to illuminate the connections between external actors, the logic that their operations followed on the ground, and how they interacted with the local community.

Eventually, the process of contacting participants and interacting with the community led me to take a more active role in the field. Since I was already in contact with external scholars and locals, I was asked by both groups to establish contact with each other. I became a bridge that shared some information between the two, eventually leading to them meeting in person. After roughly one month of research, I even borrowed a couple of camera traps and had help setting them up to try and locate a jaguar that had reportedly killed some cattle. We did not find the jaguar, but that experience opened a new communication channel between researchers and farmers eager to be heard. This situation carried some ethical considerations that I struggled to navigate at the time. Although ethnographers usually aim to "minimally disturb, or frame, social life in a research situation, but instead to look at how it unfolds under ordinary conditions" (Beuving and DeVries 2016, 65), the situation pushed me into action. To minimise my impact and unforeseen consequences, I was very careful not to influence the opinions of participants and limited to communicating the thoughts they explicitly asked me to deliver only. Additionally, as suggested by DeWalt and DeWalt (2011), I transmitted no information that could alter behaviours in the field. I was inclined to do so, especially when I perceived something to be 'unfair'. Thus, this chapter will later discuss how dealing with bias is essential for ensuring the quality and integrity of the research overall. But before then, a brief explanation of how data obtained through fieldwork was analysed is in order.

Weaving codes

Field notes and interviews were coded according to the participants' reoccurring concerns using *in vivo* coding, where semantic categories are drawn directly from the words of the participants (DeWalt and DeWalt 2011; Beauving and DeVries 2020). The goal was to highlight as much of the original voices as possible, binding together the thoughts of multiple individuals around overlapping topics. Each code was given a clear definition, and as more codes developed, they were occasionally merged to create a more solid line of argumentation. The same method was employed for analysing semi-structured interviews. Along with fieldnotes, these make up one comprehensive body of text from which most of the findings of this project are drawn.

Data analysis followed the tradition of naturalistic inquiry, which Beuving and DeVries (2020, 15) define "as studying people in everyday circumstances by ordinary means". Ordinary means include conversations and observations, both outlined above. The information collected is subject to an iterative process of analysis that begins in the field and continues all the way to the final stages of writing. The process moves repeatedly through rounds of reading, coding, integrating codes, building and then integrating theory, and writing. Ultimately, the goal is to produce a credible academic narrative connected to existing knowledge and grounded in empirical facts. This is what Beuving and DeVries (2020) call social theory, a representation of society that forms a "condensed, scientifically informed, yet accessible narrative". Theory develops from dissecting words and behaviours on the ground and showing how they are embedded in broader social networks, moving up and down multiple scales.

In this case, such embeddedness means connecting local perceptions of conservation and the actions they originate to the processes of global political economy. That multi-scalar analysis shows different results depending on the point of departure. In other words, different people, conditioned by their distinct standings within the community, interact differently with broader economic and political contexts. To make room for rich and diverse data to emerge, it was important to broaden the scope and move away from the political centre of the community.

Going towards the margins

In a conversation on the *Convivial Thinking* podcast (Dey and Fox 2020), Professor Diana Fox, Chair of the Anthropology department at Bridgewater State University, reflected on the evolution of anthropology, its colonial practices, and the practical implications for field research (see also Weston and Djojhari 2020). As she ruminated on the power dynamics that exist within societies studied by anthropologists, she posed an insightful question: Who are researchers partnering with?

> Are they partnering with people whose central goals are to sustain hierarchical relationships, many of which were further entrenched through colonisation, taking existing hierarchies and laying on top of them colonial dynamics? Are anthropologists partnering with those people or with those who are on the margins, who are in states of resistance? (Fox 2020 podcast)

How to address this question and apply it on the ground was a constant concern during field research. given the decolonial focus of this research project (see Chapter 2) and the unsavoury history of conservation.

As Krauss (2021) reminds us, communities are uneven and have internal power asymmetries. Given my position as a researcher for a foreign university and the instant status it provided, it would have been easy to stay in the centre of political power within the *ejido* and interact primarily with the people who controlled the community's governance system. After all, it was quickly apparent that those in positions of relative privilege were intent on communicating their vision and curating their image. I chose, then, to move towards the margins of the local society and talk with people who had different standings within it. Some of them were not *ejidatarios*, meaning they did not possess a plot of land and had no voting rights in the assembly. Some of them made a living working on other's land for daily wages. Some were young and, despite being highly educated, felt pushed aside by a calcified elite. Others still were in open resistance and requested to remain anonymous. This move away from the centre proved invaluable. Not only did it more clearly reveal internal struggles but, as the following chapters will show, it also provided fascinating perspectives that contrasted enormously with the visions of those sitting on top of existing hierarchies. It showed an asymmetrical society where alternatives to the status quo lie on the edges.

Gender is also a crucial factor. Women are severely marginalised within *ejido*s (Morett-Sánchez and Cosío-Ruiz 2017), where land rights – and thus political influence – are customarily inherited by the eldest male descendant. In Laguna Om, despite having a slight majority of women inhabitants (Macario 2020), female interviewees continuously pointed out how they had been "pushed aside", excluded from decisions and opportunities. Gender roles are also rigidly followed within households and beyond. Even during daily leisure activities, the separation between men and women is evident. This stresses the importance of breaking the pre-determined paths of political power to access a more rich and diverse range of points of view. As argued before, neoliberal environmental governance rigidises power structures. Thus, deviating from them is crucial for finding other options.

Further, the gender divide meant both an opportunity and, at times, an insurmountable obstacle. On the one hand, it was a chance to listen to underheard perspectives. On the other, it impacted what I could and could not access during my stay in Laguna Om. Gender and other aspects of my positionality are crucial to understand and assess the findings of this thesis, along with issues of bias that must be addressed.

Navigating positionality: gender, closeness, and bias

Hitch-hiking is something you do not do alone in Mexico. With some of the highest murder and kidnapping rates in the world, hopping into a stranger's car, on your own, on a remote side road is a high-risk activity. If you are a woman, it is even more dangerous, especially in areas boiling with *narco* presence and femicides quotidianly on newspaper covers (Miguel 2021; Lozano 2020). Getting a lift as a female traveller is putting yourself in deadly peril. I did it. I was fine. I am a man.

This experience is stuck in my brain because when I told my partner I had hitch-hiked out of a road surrounded by nothing but jungle, the first thing she said was: "You could have never done this research if you were a woman." It could have been done, I think, albeit very differently. DeWalt and DeWalt (2011, 99) recognise that gender can significantly impact the way ethnographers experience the field. "Just as men are often barred from situations in which they can know the intimate worlds of women, women ethnographers are sometimes barred from important parts of the worlds of men," they write. On several occasions, I was acutely aware that I was able to be where I was, relatively unafraid, because of my gender. I was invited to several all-male gatherings where political views were discussed. I was able to build rapport in a typically masculine fashion and even heard high-standing individuals bragging about using sexual harassment as a negotiating technique. On the other hand, I was often shut out of speaking with women. At informal gatherings, especially within households, they would often be expected to carry out service chores or simply fade to the background of conversations. And even though I actively sought out interviews with female actors, some requests were declined, and contact was often lost after an initial conversation, something much less common among male interviewees.

In their discussion of objectivity in participant observation, DeWalt and DeWalt (2011) ask: would two different observers observe the same thing in similar ways? Regarding the practicalities of this study, I have to say no. A female researcher would most likely see things differently. She would have contacted different participants and had access to other places of observation. A more incisive gender perspective and female eyes, I believe, would be beneficial for further research in the area. Time and resource limits also played a part in taking the more practical route. Nonetheless, five semi-structured interviews with female participants and several more informal conversations provide some insight into their perspectives.

My interactions in Laguna Om were also conditioned by my place of origin. I grew up in the city of Cancún, 453 km north of the *ejido*. And despite the relative geographical proximity, I was often perceived as an outsider. Some people thought I was a missionary for the church. Others said my accent sounded foreign. Rural and urban contexts in Mexico are often clashing, and that difference was clearly perceived by the people of Nicolás Bravo. However, being familiar with the area was useful for building trust with interlocutors. Also, Laguna Om is not an isolated society. Many of the people I talked to had either lived in Cancún at some point or worked in the surrounding area. Others' families were originally from Yucatán, where I had been living for the past year. Many more had migrated to the United States and were back after years of labour abroad. Cold weather in Minnesota and Oslo was an unlikely conversation starter.

Perhaps most importantly, my partner's family has deep ties to the region. Her parents are teachers and spent years working in the area, including Nicolás Bravo. It is also very likely that the *comisario* himself was a student of my partner's late grandfather, who was the headmaster at the local *normal* – a school for career teachers. On top of that, my partner's father was one of the founders of neighbouring *ejido* Nuevo Bécal. All these connections were appreciated by the people I was fortunate enough to speak with, creating a rapport that might have taken longer to build without such common ground. This closeness was also likely to increase my bias. In the words of DeWalt and DeWalt (2011):

> all of us bring biases, predispositions, and hang-ups to the field with us and we cannot completely escape these as we view other cultures. Our reporting, however, should attempt to make these biases as explicit as possible so that others may use these in judging our work. (p. 95)

This project was born from the conviction to find alternatives to capitalist forms of conservation and to the capitalist economy more broadly. Witnessing the destruction of the rainforest close to where I grew up was a primary motivator to embark on the search for other ways of protecting nature. There is no question that this predisposition has influenced my theoretical choices and, hence, my conclusions. Moreover, close personal connections to the area and previous experience, although they greatly facilitated approaching the field, can also count as potential sources of bias. While DeWalt and DeWalt (Ibid.) acknowledge total objectivity is not possible, they advise systematically examining "how the anthropologist's race, gender, sexual preferences, and other factors affect their observations." By keeping methodological notes, first scribbled on the margins of field notes and then compiled in a bespoke document, I attempted to increase reflexivity, to be honest about bias, and address it in a way that would enhance objectivity. And while striving for a more objective point of view is desirable in social research, objectivity is also a question of power that deserves further discussion.

The power of the researcher and the troubles of representation

"With whose blood are my eyes crafted" (Haraway 1988, 585). Donna Haraway's haunting phrase powerfully states that the ability to 'see', the possibility to 'know' and then represent any given reality is a question of power. This matter is especially important for ethnography, which claims to see "from the point of view of the participants" (O'Leary 2017). It puts the researcher, imbued with the authority of scientific knowledge, in the position to claim to understand through subaltern eyes. And although decolonial and political ecology scholars remark on the importance of engaging with under-represented, unheard voices to look for alternatives to a hegemonic world-system (Escobar 2016; West and Brockington 2006; García-Frapolli et al. 2009; Sullivan 2017), there are risks in these endeavours:

> There is a premium on establishing the capacity to see from the peripheries and the depths. But here there also lies a serious danger of romanticizing and/or appropriate the visions of the less powerful while claiming to see from their position. (Haraway 1988, 584)

Haraway points to a twofold problem. Firstly, ethnographic accounts that hope to find alternatives to oppressive systems on the margins can omit nuanced problematics within marginalised societies themselves. In a critique of post-developmental theory, Asher and Wainwright (2019, 30) challenge Escobar's advocacy for "critical ethnography as the method appropriate to access the subjectivity of marginalised cultural groups." They posit that – despite it being called critical – such methodology can produce unproblematised "narratives of decolonial alternatives [that] romanticise local communities and social movements." In times of ecological breakdown, they create wishful notions that "the natives will save us" (Ibid, 27). In other words, if the world is burning because of modern industrialisation, then abstract traditional knowledge and essentialised 'resistance' are panaceas. They propose that such shortcomings come not from intent, but from inadequately addressing "problematics of capital, development, difference, and representation" (Ibid,27).

Coincidentally, representation is the second issue Haraway points towards. Using Spivak's work to address matters of representation, Asher and Wainwright show the "desire to represent subaltern subjectivity to be rooted in European episteme" (p. 35). It is decolonial in its intent yet presented through hegemonic languages and concepts. It strives to challenge power structures yet observes and writes from a position of privilege. It seeks to emancipate yet reproduces the object/subject of research. From Spivak's vantage, they argue, this tension is never resolved and is rather presented as 'the aporia of representation', where it is both inevitable and impossible. They call then for constant vigilance against romanticised views of the knowledge from below and for relentless self-critique. We must confront how our representations shape the world and practice the "uncomfortable labour of applying one's critical lessons to one's own critiques." (p. 38)

Given my previous arguments for using anthropological methods, this exposition might seem contradictory, a self-defeating critique of the methodology that I used to produce the chapters that follow. However, if we take Spivak seriously, this is necessary. We must engage in the

uneasy task of perpetual self-critique and deal with "learning to live with contradictory instructions" (Spivak quoted in Asher and Wainwright 2019, 36). Thus, although the argument I will present in the following chapters attempts to destabilise colonial structures, it remains aware that it was crafted from an advantaged point of view. It written in a foreign language and presented in a university in the global north. Further critiquing anthropological research is crucial to move the field forward. There will be time to scathingly critique the methods and arguments presented in this thesis. For now, let us remain vigilant of romanticising under-represented voices and seek in them not panaceas, but possibilities for living closer to jaguars.

Conclusion

So far, this chapter has outlined the methodological elements of the entire research project. It began by defining participant observation and justifying it as the primary means of data collection. It described the progression of fieldwork, sketched out the design and use of semi-structured interviews, and then engaged in important reflexivity questions, as well as a critique of the methodology itself. Sincerely recognising the shortcomings of any given methodology and project is vital for reliable research work. To those reflections, I will finally add a couple more.

Other than the friendship I found while working in Laguna Om, perhaps the sensation most vividly imprinted in my brain is that of absolute exhaustion. While I was in the field, I was simultaneously trying to keep a remote job, the one that has allowed me to support myself throughout the entire master's programme. I was doing interviews, participating in a new setting, and still consistently working over eight hours on the computer every day. Writing field notes finished late at night. Mornings sometimes began before sunrise. At one stage, I was so tired that I could physically not get out of bed for an entire day and then had to pay a quick visit to the local clinic. There was not much wrong other than sheer burnout.

Although DeWalt and DeWalt's *Participant observation: A Guide for Fieldworkers* (2011) is a fabulous handbook for anyone trying to employ the method, the authors spend little ink on the issue of exhaustion. They engage with other challenges of participation, such as

parenting while doing fieldwork, but juggling multiple professional roles is not one of their top concerns. Perhaps it is assumed that students and researchers are only that and that doing research is their sole job. Maybe it is just not advisable to do immersive field research and have a parallel job. I would not recommend it either. Overworking yourself until you need a doctor is not the smartest thing you can do. Nonetheless, a project that was severely imperilled from the beginning by a global virus, distance, and resources finally came to fruition.

I am confident the research is relevant. It is methodically sound and, as I hope the following chapters will prove, it brings valuable insights for conservation, even for the seasoned practitioners trying to navigate social intricacies they are not trained to handle. Moreover, fieldwork did reach a point of saturation. Suddenly, new conversations began reinforcing previous information rather than providing new avenues of inquiry. When the allocated time was up, it seemed more productive to speak to other people outside of the community rather than spend more time in the field to round up the story.

That story properly begins in the chapters that follow. It is a narration of people's struggle against a precarious economy. It is about a fractured social setting that provides, via conserving the majestic jaguar, lucrative opportunities for the capitalist logic to seep through the cracks. It is about turning nature into money and converting species into tokens for exchange. Finally, it is a story about other forms of valuing nature and following the messy emergence of worldviews that persist despite a system that seeks to devour it all.

Chapter 5 – Spotted Furs and Market Fractures

It was a Friday night, but the funfair was practically empty. There were lights and music. Reggaeton was playing loud on the speakers. Yet only a handful of people were there, pacing around, buying snacks from a lonely food stand, illuminated by the neon signs of the itinerant amusement park. Not even the carousel was on. It sat still, just like the rest of the street, on an evening that should have been for joy and laughter. "This is nothing," said a man in his fifties as we sat on a bench on the opposite side of the road. "The funfair used to go for blocks, from here to the roundabout at least. People had money to spend, and families used to come here to have a good time. This is nothing. This is sad."[5] I could not help but agree. There was a particular kind of melancholy in watching the colourful lights sparkle for a non-existing crowd.

That sadness was not exclusive to the fair. There is in Laguna Om, a rural community in the south of the Yucatán Peninsula, a heavy blanket of longing that seems to weigh on people who call this place home. Many remember better days, when wood came out of the forest by the truckload, corn was heaped by the ton, and people could afford to go out on a weekend. But perhaps the most sorrowful thing was not the depressed state of the economy, but how divided the *ejido* is. "You can't speak your mind anymore because people think you only want to create problems,"[6] said a middle-aged *ejidatario*. In a village that is no bigger than a few blocks in every direction, distrusting your neighbour was alarmingly common. Reasons to suspect others abounded and I encountered almost as many theories of who was sabotaging the community's chances for development as people I met along the way. The *ejido*, many concurred, was deeply fractured, maybe irredeemably so.

This chapter explores the ruptures in the social fabric to show how conservation is exploiting them to further connect rural communities to capitalist circuits. Even more so, how environmental interventions, many revolving around jaguars, mobilise poverties and structural disadvantages to create new opportunities for 'green' investments. The story moves as follows. Section one, '*Neoliberal ejidos*', offers a summary of the recent economic developments that created the current conditions in Laguna Om. It explains how the community, like many others, became highly reliant on social development programmes and

other subsidies after the neoliberal state decided it was time to open the Mexican countryside to the free market. Further, it gives an overview of the *ejido*'s social structure and presents the evolution of conservation alongside neoliberal economic policies. Section two, '*How to capitalise on inequality'* places the argument within discussions of the pernicious effects of market-based approaches to conservation and reviews the work of authors that have shown how neoliberal environmental governance takes advantage of inequality within the world-system to create new opportunities for accumulation. The next three sections present the results of ethnographic fieldwork. '*Where are the tigreros?*' outlines the local perception of jaguar conservation programmes and research to show a profound disconnection that has political consequences. '*Seeping through the cracks*' further delves into the divisions that exist within the community and how these are leveraged to create consent for environmental projects. Further, it shows that conservation money can solidify hierarchies and marginalise groups that are already at a disadvantage within the community in favour of an elite that tends to capture the benefits from environmental programmes. Finally, '*Hope and dispossession*' explains how the yearning for a way out of poverty can result in losing land, and how internal pressures can put local elites at a considerable disadvantage when dealing with wealthier, more powerful actors. The last section discusses the findings to further insert them in a political-economic context.

Neoliberal *ejido*s

The 1990s were a turbulent time for Mexican agrarian societies. In 1992, the government of President Salinas de Gortari modified Article 27 of the constitution and, for the first time in over 50 years, allowed *ejido* land to enter the market. New legal instruments permitted formerly communal property to be parcelled and sold, prompting a wave of issues related to land speculation and dispossession (GeoComunes, Torres-Mazuera, and Godoy 2020; Torres-Mazuera 2021). Simultaneously, they permitted private companies to partner with local communities and purchase or rent usufruct rights to their land, arguing this would bring income to rural societies and kindle growth in the economically stagnant countryside (Peña-Azcona et al. 2021). A host of concomitant economic changes – chief among them the adoption of NAFTA in 1994 – further plunged *ejido*s into increasingly precarious economies (Merino-Pérez 2004). As markets became liberalised, policies formerly targeted at correcting

market failures and supporting agrarian production changed for poverty alleviation programmes, creating rural societies highly dependent on government subsidies (Peña-Azcona et al. 2021; Merino-Pérez 2004).

The shift in land tenure also changed social relationships within *ejido*s. Land parcelling legal mechanism created intra-community markets that, although they did not require full privatisation of land, resulted in highly uneven land distribution (Osborne 2013; Morett-[7]Sánchez and Cosío-Ruiz 2017). In Laguna Om, it is not rare to encounter stories of former *ejidatarios* who sold their land to other community members to pay for debt. Meanwhile, it is also common for some *ejidatarios* to own several usufruct rights, often obtained forcefully by collecting loans or other coercive deals. Moreover, land ownership is tied to stronger political influence. "The same people have been in the *comisariado* like three times!" said a man as he related how there was a clearly identifiable group that, for decades, had held on to power in the *ejido*. A small elite possesses many usufruct rights and hundreds of hectares of agricultural land. They also rotate around the main positions of political power: the *comisariado*, the *alcaldía* (mayoralty*)*, and the influential Cattle Ranchers' Association. The current *comisario*, for example, was formerly the head of the Association for over a decade. He was the mayor of Nicolás Bravo before that, and it is widely known that he owns hundreds of hectares north of the village.

There is in Laguna Om a relatively prosperous elite. The heterogeneous architecture of the village provides an idea of how uneven this small society of 3,650 people is. Walking through the untidy streets of the village, one will pass thatched huts with rickety walls, small cement houses with a couple of cars by the entrance, and the odd corner mansion surrounded by high walls, sometimes with carefully manicured lawns and even cages occupied by uneasy parakeets. Not more than ten blocks wide in any direction, Nicolás Bravo is a collection of dissimilar socio-economic outcomes. This contrast is reflected on what people do for a living. While cattle ranching is the main source of income in the *ejido*, there are only about 80 ranchers in the community. Only three of them have high levels of technification, meaning that they own tractors, have irrigation systems, and employ some milking machinery. About a dozen more have a medium level of technification, while the rest practices an itinerant and

rudimentary form of herding with only a few heads of cattle (Macario 2020). During the 1980 and 1990s, as neoliberal policies took hold, agricultural production declined in the *ejido* (Torres and Momsen 2011). Government support for growing corn and beans, as well as state-guaranteed minimum prices for crops, disappeared. Imported maize made its way to local markets, slashing the competitive capacity of local producers and even the need to continue traditional slash and burn agriculture for self-supply (Macario 2020). Even household-scale production declined as convenience stores offered novel packaged foodstuffs (Macario 2020). The people of Nicolás Bravo, which is well-connected to larger cities via a federal highway, no longer had to grow food to eat. The land lost its importance as a source of livelihoods, and the relationship to it changed radically. Today, the main economic activities in Laguna Om after cattle ranching are small businesses – anything from rustic eateries to modest hairdressing shops –, transport, and a sugar cane plantation also controlled by a reduced group of *ejidatarios* (Macario 2020). According to interviews, many more make a living as *jornaleros*, labourers who work for meagre daily wages on other people's farms or forage for fashionable thatching hay, sold to build eco-chic *palapas* in new tourist developments in the north of Quintana Roo.

Despite the egalitarian spirit in which *ejido*s were created (Osborne 2013), inequality does not only come from income – it is embedded in the social structure of the community itself. "There are social classes in the *ejido*, there always have been," said a young woman who had come back to Nicolás Bravo to seek opportunities in her own land. She is not exaggerating. Agrarian law explicitly classifies *ejido* inhabitants according to their land rights. *Ejidatarios* have full rights and access to all 'communal goods', including revenue from community productive activities, such as forestry. They have an allocated plot of land – 100 hectares in the case of Laguna Om – and voting capacity in the local assembly. *Posesionarios,* in turn, are people who have access to working land but do not receive other benefits from communal goods ad businesses. Meanwhile, *avecindados* – new neighbours – are those who recently moved to the community and, so long as they are Mexican nationals and stay in the *ejido* for over a year, can eventually become *ejidatarios* following a majority vote in the assembly (Morett-Sánchez and Cosío-Ruiz 2017). Given the already large number of *ejidatarios*, this does not happen often. Then come *repobladores,* the newest members of the *ejido*. They live

in the community but possess no voting or usufruct rights. Depending on the *ejido*, they can be assigned a relatively small share of land to work, and in Laguna Om some of them have purchased land through irregular – some say illegal– circumstances (Torres and Momsen 2011). And although they are welcome to participate in public activities, interviewees assured me that they do not receive any benefits from communal businesses, have added difficulties receiving money from state-funded social programmes, and are not consulted in key matters for the *ejido*.

Given the less than buoyant state of the local economy, people in Laguna Om and many other *ejidos* around the country have become highly dependent on government subsidies in the form of social development programmes (Peña-Azcona et al. 2021). Decades of programmes such as the Programme for Direct Agrarian Support (Procampo), targeted at small-scale corn growers, resoundingly failed to increase production. The goal was utopian at best since Mexican peasants were expected to compete with highly industrialised North American farmers in a newly liberalised market (Merino-Pérez 2004). Conservation was then presented as a complementary source of income. In 1996, enabled by the new opening of *ejido* land to market-oriented arrangements, the federal government modified the General Law of Ecological Equilibrium (LGEEPA) and "permitted community landowners and *ejido*s to freely associate with private capitals to preserve natural resources when their mutual interests converged" (Peña-Azcona et al. 2021, 114). They created a figure called Voluntary Conservation Areas (VCA), community reserves that in theory allowed "indigenous peoples, social organisations, and other public or private associations to freely allocate land for ecosystem and biodiversity conservation" (Semarnat n.d.). Other supplementary mechanisms such as Payments for Ecosystem Services (PES) further encouraged the flow of private capital towards conservation and allowed corporations to – theoretically – compensate for their environmental damage (García-Frapolli 2015). It seemed that not only conservation necessitated private money – which allowed the state to drastically reduce its environmental budget while sticking to international environmental commitments (Peña-Azcona et al. 2021) – but more significantly, there were signs in Mexico that economic growth needed conservation just as badly.

Current jaguar conservation programmes in Laguna Om are directly tied to the environmental instruments born at the start of the neoliberal era. In 2019, Laguna Om certified its 35,000-hectare community forest area as a Voluntary Conservation Area (VCA). According to personnel of the Calakmul Biosphere Reserve (CBR), they worked closely with the *ejido* to preserve the largest community forest massif in the Yucatán Peninsula – shared with adjacent *ejido* Nuevo Bécal – and integrate it into a wildlife corridor they call *Paisaje Jaguar* (Jaguar Landscape). At the same time, through its large forest area, the *ejido* was eligible for public-private PES for biodiversity conservation, which they received for five years (Sosetec 2018) and are now looking to renew. Also in the VCA, scientists of the National Alliance for Jaguar Conservation (ANCJ) carry out jaguar monitoring work and pay a yearly rent to the *ejido* for the use of communal land. As the rest of this chapter will show, the implementation of these projects is intimately connected to the unequal internal structure of the *ejido* and the advance of the global political economy that continuously seeks opportunities to penetrate previously uncommodified spaces.

How to capitalise on inequality

Environmental governance has evolved along with capitalist regimes of accumulation. From fortress conservation, which sought strict territorial control, to the advent of market-based conservation instruments (Fletcher and Toncheva 2021), environmental policies and mechanisms have accompanied the shifts in the global economic system (Merino-Pérez 2004; Büscher and Fletcher 2015). The rollout of the neoliberal project and its urge to "commoditise aspects of the world so that they can be governed by the market" (Dunlap and Sullivan 2020, 555), spawned an increasingly sophisticated form of environmental governance that critical geography and political ecology scholars increasingly recognise as 'neoliberal conservation' (Sullivan 2006; Igoe and Brockington 2007; Büscher et al. 2012; Dunlap and Sullivan 2020). This market-oriented approach tends toward the environmentally motivated appropriation of land and resources (Fairhead, Leach, and Scoones 2012), integrates conservation and economic development (Igoe and Brockington 2007; Brockington et al 2008), and assimilates ever more parts of nature through market-based conservation instruments (MBIs) such as Payments for Ecosystem Services (PES) and carbon offsets (Fletcher and Toncheva 2015). By reframing nature as 'natural capital' or an

'environmental service provider' (Sullivan 2009), MBIs aim to extract ever more value from conserving resources in place via creative mechanisms that liberate capital from investment in fixed assets – what scholars call the 'financialisation of nature' (Büscher and Fletcher 2015; Sullivan 2009; Büscher 2021). Conservation is a business, part of a system that comes up with all kinds of creative ways of making money from saving nature.

Further, neoliberal environmental governance depends on global structural inequality (Büscher and Fletcher 2015). Places of so-called unexploited natural capital are targeted by biodiversity conservation to either enclose resources for future development or to displace the environmental costs of industrial expansion to where they can be compensated most cheaply (Fletcher and Toncheva 2021). MBIs thus transfer the negative externalities of accumulating capital geographically from the core to the periphery, keeping lucrative business in the centre while passing down the environmental costs to less developed areas (Ibid.). Büscher and Fletcher (2015) further argue that conservation has become so integral to capitalism that it can be seen as igniting a new process of accumulation within the world-system, one that preys on uneven geographical development.

In the same vein, Dunlap and Sullivan (2020, 564) identify how neoliberal environmental governance can operate as a form of market-based, poverty-pushed environmentalism "through which dispossession, cultural fragmentation and poverties are mobilised as gateways and opportunities to implement neoliberal expansion in local contexts." Moreover, they compare neoliberal conservation to 'small-scale disaster capitalism' that exploits local distress to push capital expansion. Desires for development and economic opportunities of impoverished local communities are used to manufacture consent for environmental programmes which aim to change the behaviours of rural populations, making them more 'environmentally friendly' or 'sustainable', and bring them into transnational markets (Dunlap and Sullivan 2020; Büscher and Fletcher 2020). Disaster capitalism, the term coined by Naomi Klein (2007), is indeed useful if we think that disasters are not only destructive weather events or wars, but also socio-economic crises such as the precarious existences of *ejido*s like Laguna Om.

Further, the social fabric of rural populations appears to be so fractured by decades of neoliberal policies (Peña-Azcona et al. 2021) that internal corruption and distrust can also offer fertile ground for these accumulation opportunities. Other political ecologists have used the notion of 'disaster capitalism' to show how environmental policies use crises as business opportunities. Fletcher (2012, 101), for example, analyses carbon markets to reveal how "harnessing the image of climate change as an impending disaster [serves] to promote new forms of neoliberal governance" that use conserving nature for non-consumptive use as a newfound source of value creation. Moreover, he inserts environmental fixes in what Harvey (2004) calls 'accumulation by dispossession', where rather than finding new sources of value, it is accumulated by "appropriating resources formerly controlled by others or held in the public domain for the enrichment of a minority elite" (Fletcher 2012, 101).

As Krauss (2021) points out, rural communities often have important social differences, which signals that local elites can enact processes of dispossession and accumulation in their contexts. Peña-Azcona et al. (2021, 113) have studied how neoliberal conservation schemes can contribute to the elite capture of resources by looking through the lens of 'systemic corruption', defined as "a form of political decay that manifests itself as an oligarchisation of power in society." Using a case study of Voluntary Conservation Areas (VCAs) in the southern Mexican state of Oaxaca, they map the distortions of an idealised neoliberal conservation model that is plagued with uneven power dynamics. They acknowledge that privatisation of *ejidos* in 1992 was accompanied by new environmental policy instruments that, despite what they call their 'ideal-form' design, the 'real-world' application involves skewed relationships detrimental to local communities and to marginalised groups within those communities. Neoliberal economic policies, they argue, have "molded rural societies towards a strong dependence on governmental programs and subsidies" (Peña-Ancona et al. 2021, 113). Public and private environmental actors, in turn, take advantage of the locals' need for a monetary income (self-sufficient rural households are rare) to push conservation subsidies, linking impoverished communities to global markets through weak cash flows (Ibid.). Further, programmes are not usually negotiated with the entire community (Aguilar-Støen 2015; Dunlap and Sullivan 2020). Rather, government institutions and NGOs engage only with 'community leaders', who they can pressure more easily. Exploiting the need for short-term gains and inciting hasty negotiations erodes communities' collective bargaining

power, which “deepens the institutional failures that affect the rural communities and promotes perverse relationships that attempt against local biocultural values” (Peña-Ancona et al. 2021, 113). Simultaneously, it aids the capture of local political and economic power by a relatively privileged group who decides on behalf of the whole community.

Other authors have analysed how neoliberal conservation instruments can exacerbate inequality and elite capture of benefits at a local level (Aguilar Støen 2015; Osborne 2013). Further, thanks to the dependency on cash transfers, communities can become clients of a conservation microfinance scheme that preys on structural poverties and the longing for development to commoditise nature to the detriment of socio-ecological relations not regulated by the market (Dunlap and Sullivan 2020). To understand how this process works on the ground, one needs to see the community from within. Hearing how people perceive jaguar conservation programmes and the actors involved sheds light on the workings of environmental interventions and how they change not only the way people interact with nature but with each other.

Where are the tigreros?

The Palmas field research station could easily be in a jungle movie. Hiding along a winding, pothole-mined asphalt road that splits Laguna Om’s community forest from north to south, it is not much more than a handful of palm-thatched wooden huts hiding among lush vegetation. The ground is muddy and will stick mercilessly to your boots. The mattresses in the cabins are damp with air moisture and, in the morning, a dense mist covers the shallow lagoon, making the thunderous calls of howler monkeys even more dramatic. Rustling leaves announce a troop of spider monkeys that pass through most afternoons. An insect choir sings lazily at night. Most of the year, the station sleeps in a tropical lethargy. Only three men work there all year round, making sure that equipment is well kept and that the wooden structures do not yield to sun and rain. But other than their daily maintenance activities, life moves as slowly as the summer breeze between the trees.

However, every few months, this place becomes the headquarters of an ecological research operation that practically revolves around a single species – jaguars. During the dry season,

ecologists from the National Autonomous University of Mexico (UNAM) and the National Alliance for Jaguar Conservation (ANCJ) come to Laguna Om to monitor wild cats. In practice, this means a double operation. On the one hand, putting a host of motion-triggered camera traps in remote forest paths and, months later, recovering the memory cards to download and process the data. On the other, it requires physically capturing jaguars. In fact, the men who work at the Palmas station are not only proficient at keeping the place tidy. They are expert trackers who, using a pack of well-trained hounds and a small herd of goats that will serve as bait, catch jaguars in the labyrinthine jungle.

A capture outing roughly goes like this. Goats are placed strategically in the jungle, somewhere jaguars are known to roam. When a feline takes the bait, possibly after a couple of days, trackers release the pack of hounds. "As soon as the leader howls, you know they've picked the scent," says an experienced tracker. Then the chase proper begins. The hounds bolt after the cat, guiding the trackers that run behind them through ankle-breaking terrain. Although jaguars are much stronger than dogs – a single swipe is enough to kill a hound – the pack will corner the cat and make it perch on a tree, offering the prime opportunity for trackers to shoot a tranquilising dart on a large enough muscle, tie the unconscious jaguar with a rope, and put it safely on the ground. The biologists and veterinarians, trailing behind the action, will then examine the animal, take all the necessary measurements, and place a GPS collar around its neck. The jaguar will then provide crucial information about its behaviour, habitat use, and other ecological markers. When the job is done, the researchers return to the city, putting the Palmas station back to its humid jungle slumber.

The work done in Laguna Om is spectacular. Not only because of the thrill of the chase, but because it has been an essential part of a national jaguar conservation strategy featured in books, conferences, and documentaries. However, many people in Nicolás Bravo know very little about what the researchers are doing. In fact, some know nothing at all. "I wasn't even aware that they were there," said a young woman when I brought up the topic. A man who was also a conservation volunteer was not surprised. "I can assure you that 80 per cent of *ejidatarios* don't know there are cameras in the bush. There was recently a video on YouTube of [illegal] hunters with their rifles who were not aware they were being recorded [in their

own *ejido*]."[8] How could they not know this was happening in their own land? The ANCJ has done its best to publicise its work in the community (Miranda 2019). The images the man talked about even ended up in the national media. This information, however, is not making its way back to the community. "I don't think [members of ANCJ] have ever come to a general assembly to present a report of what they are doing. I have been active in *ejido* matters for a decade now, and I have never seen them," said the conservation volunteer, who had inherited his land-right not long ago. Others who had been part of conservation groups themselves also felt alienated from what was happening with jaguar researchers. A middle-aged woman said:

> We never really agreed with [the conservationists] being there. Mainly because out of all the information they gather, they share nothing. And that is what we have been asking for – information. How many animals are there, how many prey, or something like that. They have never given us that.[9]

Many people are eager to know what happens in their forest and see the work done by ecologists as a potential window into the depths of the jungle. I had the chance to experience this enthusiasm first-hand when I borrowed a couple of camera traps from ANCJ researchers and placed them in a forested area close to the *ejido*'s agricultural land, where a jaguar had recently killed a couple of calves. We did not get the jaguar. However, we obtained some beautiful images of wild hogs, agoutis, and even an ocelot. And people were fascinated. Every time I opened the computer to show the pictures, people would smile excitedly, calling others to come and see. "There are still many *animalitos* [little animals] in the jungle!" several exclaimed. They are aware that the jungle used to have more wildlife. Decades of exploitation have made the forest a quieter place (see Chapter 1). Still, they were delighted to see not all was lost. Despite everything, some of the forest's dwellers are still there.

Other opportunities where locals could engage directly with conservation programmes showed a similar spirit (see Chapter 5). Nonetheless, the general perception is that researchers have not allowed the majority of *ejidatarios* the opportunity to interact with their work. Meanwhile, some feel that the conservationists have not kept their promises.

> They have abandoned us. When they first came here [to get community approval for the research project] they even said in the assembly that they would buy baseball gear for the village. They gave nothing.[10]

Moreover, since people have little knowledge of their activities and do not interact with the researchers, it is hard to see any benefit from having them working in their forests at all.

> A direct benefit? Well, no. They don't even employ people from our village. I think there was one, but the rest are all from [neighbouring *ejido*] Caobas. Our community is completely pushed aside. There were some jobs in the beginning when they were first installing the camera traps, but not much else. It was the old *ejidatarios* who showed [the researchers] the old paths in the jungle that were used to extract rubber and wood… However, many *ejidatarios* don't know they are still there.[11]

This disconnection with the community takes a more tangible form when jaguar-human conflict is brought into the equation. Habitat loss and retaliatory killing by cattle ranchers are the two main threats for jaguars (Ceballos et al. 2021). While purported solutions to habitat destruction like nature reserves and wildlife corridors are usually top of mind (see for example Ceballos et al. 2006; Medellín et al. 2016), the mechanisms for palliating conflicts with the carnivores are feeble at best. Working closely with local communities to reduce predator-cattle conflicts is supposed to be central to conservation strategies (Ceballos, Zarza, and Cercedo-Palacios 2016), however, in practice that interaction is essentially reduced to providing compensatory payments. Such is the case of the Cattle Insurance programme, which is infamous among locals for its inefficacy. Biologists at the Calakmul Biosphere Reserve admit that "people don't bother calling because they can't get through,"[12] and even when they do, it is notoriously difficult to get compensation[iv]. Other participants assured that they have tried to get in touch with environmental authorities, such as Federal Environmental Enforcement Bureau (Profepa), but instead of offering solutions they threaten them with legal consequences if any harm comes to the predator.

> Many people are interested in conservation, but [environmental authorities] don't help them. Profepa comes to a village and tells people that if they kill the jaguar, they

[iv] Other agencies like the Federal Environmental Enforcement Bureau (Profepa) are equally unreachable. When I first managed to contact ranchers affected by recent jaguar predations, I spent three hours on the phone trying to get hold of someone at any government agency who could help. I was unsuccessful.

> will fine or arrest them and provide no support. They are not scaring anyone. Anyone can poison the animals and then they will die over there [somewhere untraceable].[13]

Unsurprisingly, people are angry. Ranchers affected by jaguar predation explicitly asked me to use my research project to communicate their demands to the biologists who they knew had stakes in the community but would not even answer the phone.

> The idea is that you use this [interview] to give them a fucking slap […] What else can we do? We tell this to the *comisariado*, but there is no action. Sometimes we contact the local people who work for them, but their bosses don't listen to them either. They keep to the Palmas station and rarely come to this area [where the cattle fields are]. Ranchers are tired, they want to act differently.[14]

'Acting different' means hunting the jaguar, which according to several sources happens often. Poisoning and shooting are the preferred methods for getting rid of an animal that is causing harm. Small-scale cattle ranchers and sheepherders feel strongly about this[v]. Losing a couple of animals to carnivores can have a significant impact on their economy. And while tracking collars can deter killings – people are wary of shooting a GPS tracked animal due to fear of being found – poison is very difficult to trace. It is also sometimes preferable to worrying about losing one's livelihood. Nonetheless, some ranchers have refrained from taking retaliatory action. "We haven't done anything out of respect for the fauna, for nature [...] What we want is to speak directly to the president of the jaguar group and see how he can help us."[15]

Such ecological awareness is certainly not uniform among ranchers. There are many stories of people who have killed jaguars despite being aware that it is a federal offence. However, others want to be heard and are happy to talk about alternatives different to monetary compensation, like receiving technical assistance from conservation experts on how to deter predators[vi]. And even though it is often unclear if jaguars or other animals are responsible for the attacks, the general perception is that the *tigreros*, as locals call the 'jaguar people', are

[v] Some of the more extreme agrarian leaders in nearby *ejido*s call for the extermination of predators in the area (Comunicaciones 2021). Their positions, however, often differ from those of small producers.
[vi] There are ongoing technical assistance in nearby areas, especially in ejidos that are in or immediately adjacent to the CBR. However, interviewees in Laguna Om feel there has not been this kind of support in their community.

either useless or wilfully neglecting the *ejido*. Even more, there are all sorts of rumours about conservationists making huge profits from their research and giving nothing back to the community. Some people speculate they sell camera trap pictures for thousands of dollars. Bolder claims say they relocate and sell the jaguars they capture. The importance of the gossip is not whether it is true or not, but that it shows a general distrust of the jaguar conservationists. And distrust and animosity have political consequences.

Seeping through the cracks

I was aware that *ejido*s were not homogenous societies. But in a village that is barely a couple of kilometres wide, where most people are either related or at least know each other, I did not expect such profound divisions. Social fractures run deep, and they are painful. "There is no hope," said a man in his fifties. "No one trusts anyone, not even their own shadows. I have thought about it many times. The only solution would be to get rid of all *ejidatarios* and start over."[16]

The inability to reach agreements was often seen with the same kind of sorrow as the declining state of the local economy that makes people long for the buoyant 1970s (see Chapter 1). As soon as I arrived at Nicolás Bravo, socio-political tension and economic stress were palpable. Talks of corruption among the *comisariado* were commonplace. There were discussions of who had been worse, the current leaders or their predecessors. People speculated about how much money had been embezzled from social programmes and from the communal forestry business. Gossip of who was backing what political faction and for what motives abounded. There were even credible rumours of a brewing *coup d'état* that would put the *comisariado* in the hands of an opposition group. Often, when there was deliberation about who was responsible for the widespread misery in the community, the answer was "*un grupito*" – a 'small group' – an abstract and contemptible entity made up of whoever was not explicitly in favour of what the speaker in turn was proposing. "Leaders are leaders because they are cunning and deceitful," added an *ejidatario* in his sixties[17]. Suspicion of one's neighbour's political intentions was common currency, and it extended to the motives that brought jaguar experts to Laguna Om.

Jaguar conservation research in the community is partially funded by a conservation NGO called Amigos de Calakmul. Through representatives who are also part of the ANCJ and UNAM, they pay the *ejido* a yearly rent for using the Palmas encampment as a research station. Although the website is no longer active, Palmas is listed as a biological station belonging to the UNAM's Institute of Ecology. Since the payment is done for conservation work, the National Forestry Commission (Conafor) considers this 'rent' as PES and then doubles the amount paid to the *ejido*. This process is fairly well regulated and involves a trail of paperwork. However, since the *comisariado* can then freely dispose of the money, agreements are perceived to be made behind closed doors. Thus, there is a widespread notion that jaguar conservationists have covert dealings with the *comisariado* and that their money is financing the private interests of those in power. Like a young *ejidatario* put it:

> It was never shared in the assembly [how much they were paying]. The leaders know because it is them who receive the money, but the rest of the *ejidatarios* like me don't know anything about the amount […] It goes directly to the leader's pockets.[18]

Other *ejidatarios* do remember at least one information session at the inception of the research project. They also know something about the amounts paid to the *ejido*. However, they concur that the negotiations are not transparent, especially because of the lack of information about what goes on at the research station:

> Why don't [conservationists] give us any information? Why do they not make it public? If someone is hiding information from you, you know there is something wrong […] They do all their dealings secretly. We have only been invited once to an informative session and the leader [of the conservationists] wasn't even here.[19]

Although participants perceive the negotiations in contradictory manners, conservationists do interact primarily with *ejido* leaders. At the end of 2021, members of the ANCJ had talks with the *comisariado* to agree on the conditions to continue using the Palmas field station. These conversations were private because, as a member of the *comisariado* assured, "this matter cannot be brought to the assembly because it would be too chaotic."[20] The result and content of such interactions, as well as how the money that comes from the project will be used, may or may not be communicated later in an assembly to the rest of *ejidatarios*. And although conservation experts are aware of the lack of transparency – for which they make

the *comisariado* responsible – and that leaders will probably use conservation funds discretionally, they argue it is not their place to meddle in the subsequent political processes:

> We are respectful of the *ejido*. We give them the resources and [how they choose to use them] is something that we stay out of. Everything must be approved by the assembly. We announce how much money we are giving, obviously, and once they receive it, they have to do some paperwork with Conafor, but how it is used specifically is *ejido* business only. We cannot get involved for multiple reasons […] In any case, for us [the political dynamics of the *ejido*] are trivial. As long as there are more trees, more jaguars, the rest [...] is a prerogative of the *ejido*. They have to make sure their leaders work well and that they do what they are supposed to do. That is none of our business.[21]

As the democratically elected representatives of the *ejido*, the *comisariado* oversees all affairs with external actors, and simultaneously carries out multiple negotiations with private and public institutions to channel funds into the community. Perhaps the most important one happening during my time in Laguna Om was that of a compensatory payment that the federal Ministry of Communications and Transport (SCT) has owed the *ejido* for over four decades, ever since communal land was expropriated to build the Chetumal-Escárcega federal highway that now splits the *ejido* in two (Marín 2021). This negotiation is not only significant for the amount (the government is offering the *ejido* 25 million pesos while they are fighting to receive 120 million) but for what it reveals – the community's perennial hope for money from outside. In the words of a woman in her fifties:

> I sometimes feel sad. Only God knows if my [elderly] father will be able to even buy a *refresquito* [a bottle of soda] with that SCT money. Many people have died with that hope, and there are many more who are now too old. That is what the community leaders should be worrying about.[22]

Incoming money is supposed to be evenly distributed among all *ejidatarios* and complement struggling household economies. However, it is common for people to burn the cash immediately. "I don't know what happens to people, it is like as soon as they have money their hands get itchy," said a middle-aged man in an ironic tone[23]. That metaphoric itchiness compels many to buy alcohol. "When [the money from SCT] comes, they will put it straight down their throats," said a woman with a laugh as if to say, 'what are you going to do about it'[24]. Others did not find the fact as amusing. "Our community produces nothing," uttered

another *ejidatario* sadly during a backyard gathering where the conversation bounced from the SCT payment to how people had grown accustomed to accepting government money. He said:

> [Decades ago] There used to be corn. Loads of it. The bodega was overflowing with corn. But no one grows anything anymore. I'm not sure how this happened. Before, there were not so many programmes, and even without the *apoyos* [cash transfers] people had something to eat. That was the point of the programmes! There should be food. But now there is not even that. [People] became a bunch of freeloaders and got used to receiving handouts.[25]

The prime example of what he was talking about was Procampo (see Chapter 1), easy money that disincentivised productive activities. Procampo is widely considered to be an ongoing public policy failure that deepened dependency on government aid (Pech, Mendoza, and Sáenz 2018). And although many people in Laguna Om criticised the programme and recognised its pernicious effects, the second day I was in the *ejido* people were queuing at the entrance of the Casa Ejidal, the main government building where assemblies and other official events are held, to receive their Procampo payment. Inevitably, those who lack a steady monetary income are eager to receive subsidies, and as the *comisario* himself explained, it is his job to keep more *apoyos* flowing. "At least 90% of ejidatarios need the cash,"[26] he said.

Money can come in the form of conservation funding, too. In 2019, Laguna Om certified its 35,000-hectare forest area as a Voluntary Conservation Area (VCA). The certification was widely celebrated. Federal authorities heralded progress in the national environmental agenda (Semarnat 2020). The Governor claimed it demonstrated his state's commitment to preserving nature (Gobierno de Quintana Roo 2020). The ANCJ hailed it as an achievement of their work with the community (ANCJ 2019). However, the recently elected *comisariado* seemed to have trouble understanding what having a VCA really meant. The certification process had been finalised before their time, led by Nicolás Bravo-born academics who designed the project along with personnel of the Calakmul Biosphere Reserve (CBR), so the new authorities were unaware of what the VCA did. It all became clearer after they had a chat with the directors of the CBR. The VCA they learned, gave the *ejido* access to government and private-funded PES for biodiversity conservation, primarily because of their

jaguars. Laguna Om had in fact been receiving money for five years, both from the National Forestry Commission (Conafor) and an NGO especially concerned with jaguar conservation (Sosetec 2018). Further, the VCA gave them access to money and equipment for community surveillance activities. Maybe even a new pick-up truck, which was both a tool and an attractive symbol of status for the *comisariado*. I was there when they heard for the first time, over a phone conversation with the director of the Biosphere Reserve, that the VCA had monetary benefits. They were delighted. "I knew there was money!" they exclaimed. "We have to get more resources from wherever we can."[27]

For the *comisariado*, the ability to funnel cash transfers on behalf of the community is not only desirable or expected, but also a political tool. As mentioned earlier, the social climate in the *ejido* is turbulent at best. Late in 2021, tensions had reached a critical point, with accusations of corruption flying in multiple directions. An opposition group, led by some wealthy *ejidatarios,* who had been previously in power and faced accusations of embezzlement themselves, was known to be planning a coup to take over the *comisariado*. Simultaneously, the current *comisario*[vii] and his team were scrambling to get quick money and appease the growing faction that aimed to oust them. One of the primary possibilities for getting cash fast was the pending settlement of the SCT debt, which they were trying to accelerate via frequent meetings with government officials and even demonstrations in Chetumal, the capital city of the state of Quintana Roo. Another option was using money from carbon credits. Laguna Om had recently signed a carbon-offset deal with a company called Toroto that promised to bring a considerable sum every year for the next three decades. There was deliberation among members of the *comisariado* about how to use the projected profits to gain the favour of dissident *ejidatarios*. "We have to figure out a way to quell [the opposition]. Let's use the deal with Toroto. We can tell people that they will be able to sell offsets from their own plots,"[28] said one of them. Some of their most politically engaged rivals would not bite. People on the other side of the political quarrel liked to denounce the "conformism of those who are happy as soon as they get a thousand pesos" and the malice of capitalising on the poverty of the elderly *ejidatarios*. Others, however, would welcome the

[vii] As a reminder, the *comisariado* is the body of representatives that are democratically elected by the *ejido*. The name can be used either for the group of people who are currently in office of for the office itself. The *comisario,* on the other hand, is the chairperson of the *comisariado*.

opportunity. In fact, some people were already thinking about what part of their land could serve best for carbon capture and were happy the *comisario* was making them part of the plan. The money would probably take a while to come, but that was ok. The hope for money is just as potent as cash itself.

Hope and dispossession

There is in Laguna Om a profound desire for development – better jobs, higher wages, and clearer career paths. "There are not enough job opportunities here. We need more companies, more investment so our village can have more vitality, a better economy. Because, you know, without a [strong] economy there is no way to live", said a woman who was hopeful this *comisariado* would bring better conditions to the *ejido*.[29] Conservation is part of this ambition. The jaguar-inspired VCA, for instance, is seen by many as an opportunity to attract travellers and make a decent living out of eco-tourism. Highlighted by the United Nations Development Programme as a means to achieve Sustainable Development Goals (SDGs) (UNDP n.d.), VCAs offer connections to global markets through PES funded by multinational companies, carbon credits, and international tourism. Now, the vision of a future where transnational money brings prosperity to the *ejido* is, for some, becoming more tangible with the arrival of Tren Maya. The new railway line that will circle around the Yucatán Peninsula will pass straight through Laguna Om, which means more tourists looking to hike in pristine jungles will soon come to their doorstep. The *comisario* himself is currently looking for money to build eco-lodging in the VCA. Others are organising in groups and getting training as nature guides, hoping to make sustainable use of their jungle. Meanwhile, others are aware that they will have to make environmental sacrifices. "To move forward you have to destroy. I don't support that, of course. But that's just how it is,"[30] admitted a woman.

Tren Maya, many hope, will also bring a handsome payment. Just as it happened with the federal highway, building the train tracks will require expropriating communal land. Although it is still unclear how many hectares will be sold to the government, people are already speculating about the amount they stand to make from the operation. Walking around Nicolás Bravo, one can hear neighbours excitedly talking about the money – when will it come and how much it will be. A common estimate is that each *ejidatario* will get 200,000

MXN, approximately 10,000 USD, which in this context is a considerable amount. And it is already being spent. Trusting that the payment from Tren Maya will come soon, some people are buying goods now, promising to pay when they get their share. These arrangements, however, do not usually go as planned. Senior *ejidatarios* remember something similar happening with previous infrastructure projects, namely the federal highway and a high-voltage power line that runs parallel to it. *Ejidatarios*, hoping for future payment, acquired debt, typically financed by some of the wealthier community members. But the money did not come when they expected. So, when creditors demanded to be paid, debtors had no alternative but to settle the score with their land. Thus, some community members ended up landless, while others accumulated a lot more than the 100 hectares they were originally entitled. Devoid of land, people then clung to their *ejidatario* status to keep receiving subsidies from social development programmes. This was bound to happen all over again.

Subsidies are perceived as a crucial source of income for a village where very few *campesinos* produce enough food for themselves and their families, let alone to sell for a profit. However, access to them is not equitable, it depends heavily on people's social standing in the community. While *ejidatarios* are entitled to receiving all the benefits that come to their village, *repobladores* have no such rights. Moreover, the predominantly male land tenure – there are about five times more male than female *ejidatarios* – means that getting money from government programmes and other benefits is heavily conditioned by gender. Some women even feel that they have been prevented from obtaining what is rightfully theirs. For example, one woman mentioned how she and others were barred from participating in Sembrando Vida, a national agroforestry and conservation project. The programme gives *ejidatarios* 5,000 MXN a month to grow crops that will, in theory, reforest degraded land and provide basic food and income. But not everyone made it in.

> They left us out. I and other women filed our applications and were not considered. It's not fair. The *comisariado* decides who is in and they might say 'not you' just because they don't like you. Other *comisarios* have done that, but this one is different. They consider people.[31]

Her words are enlightening in several ways. They show the frustration of being unable to access the development opportunities that social programmes offer. They also reveal how

some community members – especially women – can be marginalised within their own communities. Lastly, they exhibit the persisting expectation that *comisariados* will do good for their *ejido* despite all their flaws. Local leaders, in turn, face pressures to attract more investments, which can lead them to hastily accepting deals that are less than ideal.

Negotiations with Amigos de Calakmul for the continuation of the jaguar project in the Palmas field station are a good example. Every time the *comisariado* changes hands and new leaders take over, the 'leasing' contract is revised. Many participants assure that this is the only time when conservationists come to the village and engage with locals, rather than sidestepping it entirely and going straight to their research quarters. The periodic round of negotiations happened most recently in late 2021 – and talks were tense. The new *comisariado* wanted to raise the yearly rent for their land. The NGO, on the other hand, attempted to pressure them into stopping all forestry activities and signing a carbon offset deal presented as part of jaguar habitat conservation work which, they assured, could bring millions of pesos more to the community. Laguna Om did not accept the carbon credit offer due to their previous agreement with Toroto and, offended by the scientist's arrogant demeanour, they even considered expelling the NGO and ceasing jaguar conservation projects despite losing their annual fee[viii]. But money played its part. It is a common belief that the work done by jaguar conservationists is a lucrative business. People assume that camera trap pictures are worth thousands of dollars and that biologists are getting rich from juicy documentary contracts. Naturally, they want in. "We don't want to be clients, we want to be partners,"[32] said a person close to the *comisariado* who wanted not to expel the NGO, but to bargain for a larger cut. They were, after all, the owners of the land and, by extension, of the jaguars. However, the *comisariado* finally decided to let the scientists stay and keep the annual income. Their reasons were clearly summed up in a single phrase said over a phone call: "If we don't let them stay, who else is going to give us that money?"[33]

[viii] Other *ejidatarios* said this had happened before and related how the same NGO had been previously expelled from neighbouring *ejido*s due to similar disagreements.

Discussion and conclusion

This chapter investigated the complex social and political dynamics of an *ejido* in southern Mexico to show how jaguar conservation programmes aid the neoliberal market logic to further penetrate rural societies though their social fractures. It started with an overview of the recent economic history that created the current conditions in Laguna Om, highly reliant on social development programmes and other subsidies, and traced how new environmental governance policies spawned during the neoliberal period. It also provided a summarised view of the *ejido's* social structure. Further, the theoretical framework of the chapter argued that neoliberal environmental governance preys on structural disadvantages and poverties, linking rural communities to global capitalist circuits by entrenching their dependency on environmentally motivated cash flows. Later, ethnographic fieldwork presented the perceived disconnection between jaguar conservation projects and the majority of the *ejido's* population. It also detailed the deep divisions that exist within the community and how these facilitate the implementation of conservations schemes. Lastly, it shows how conservation funds reinforce existing power structures and favour a calcified elite. Dependency on subsidies, we have seen, can result in the wholesale alienation of land that is appropriated by community elites, who are in turn at a disadvantage against wealthier external actors.

There are some points that should be further discussed. Firstly, people feel utterly disconnected from jaguar conservation work done in their own *ejido*. They lack information about conservationists' activities and feel neglected by people who call themselves experts in dealing with a conflictive predator that can significantly damage the economy of the most modest ranchers. Conservationists, in turn, assure that do share information and that they are willing to provide assistance. Currently, however, excluding rare exceptions, the management of human-jaguar conflict is reduced to compensatory payments that are hard to obtain or to threats from environmental authorities. Thus, unhappy *campesinos* feel the need to hunt jaguars and other predators to prevent damage to their livelihoods. They are mostly undeterred by legislation protecting the species and are indifferent to conservation subsidies like PES that do not trickle down to most *ejidatarios*. It is a widely shared opinion among locals that they receive no benefits from ongoing jaguar research work in the community. Also, the lack of information to the general population of the *ejido* about conservation work

prevents people from forming potentially meaningful relationships with the species. Given the general interest in interacting with researchers and learning more about what happens in the jungle, there is room for bolstering approaches that not only rely on sanctions or compensatory payments but also strengthen ties between humans and non-humans.

The mechanisms currently in place dovetail from a wider political economic context. The neoliberal state has created rural communities that are in perennial need of monetary transfers to avoid abject poverty (Pech, Mendoza, and Sáenz 2018; Peña-Azcona et al. 2021), which forces them to search for supplementary sources of income. During the 1990s, the government relinquished its responsibilities toward rural communities and, arguing that a liberalised market would kindle competition and growth, exposed them to the voracity of neoliberal globalisation (Barsimantov et al. 2009; Merino-Pérez 2004; Stephen 1994). Simultaneously, it created conservation mechanisms that permitted 'partnerships' between now liberalised *ejido*s and transnational investors, creating a bridge for global conservation capital to flow towards the Mexican countryside (Peña-Azcona et al. 2021). These policies allowed investors to 1) cost-effectively 'offset' their environmental damage and 2) capture the value of natural resources by conserving them in place (Büscher and Fletcher 2015). Thus, resource-rich rural societies became new sites of extraction, while green capital produced the poverty and dependency it required to maintain capital flows.

The consequences of neoliberal environmental governance are tangible. As discussed earlier, the *comisariado* is primarily responsible and capable of negotiating the cash transfers that their community relies on. This gives them political leverage that they use to keep their positions of influence. Moreover, uneven social outcomes mean that some ejidatarios stand to make gains from subsidies, while others are either excluded from them or use the money to make up for precarious living conditions. Subsidies then disincentivise self-sufficient rural economies, further entrenching the dependency on public-private handouts and extraordinary cash flows like those coming from infrastructure projects. Benefits from such supplementary income, however, are short-lived. Easily obtained money is typically spent on alcohol or other non-essential goods. Further, the often-unfulfilled promise of receiving extraordinary sums can result in unpayable debts and dispossession in favour of a local elite that captures ever more land and the political influence that comes with it.

Moreover, environmental actions that are guided by a vision of conservation that relies almost exclusively on monetary incentives sidesteps more meaningful engagement with the community. As mentioned before, members of the ANCJ feel it is not either their job or their business to engage with the chaotic political landscape of the *ejido*. They argue that the *ejido* as a social entity has agency and can decide what programmes it chooses to participate in and must autonomously regulate the internal performance of the money and information it receives. This, however, "can perform an underhanded colonial apologetic, allowing agency to function and thrive only as long as it is subsumed by the grid of (neoliberal) state-corporate interests, while simultaneously neglecting the legacy of past and political struggles" (Dunlap and Sullivan 2020, 563). Conservationists choose to ignore "asymmetrical and preexisting power relations that do not simply disappear with the inception of a project" (Aguilar-Støen 2015, 955). In other words, opting to omit the multiple pressures – both internal and external – that *ejidos* are subject to, normalises and justifies the structural disadvantages that allow the continuation of conservation programmes themselves. Furthermore, since the work done by jaguar conservationists is seen in the *ejido* – perhaps naïvely – as a profitable business, locals are looking to participate in it as equal partners. They know the value of their land. However, they often lack the acumen and the state of mind to calmly negotiate better partnerships. In turn, neoliberal approaches construe rural populations primarily as recipients of conservation money, which they use to obtain yet more subsidies (Peña-Azcona et al. 2021). Thus, conservation funding reproduces communities as passive beneficiaries waiting for money to trickle down from 'environmentally conscious' benefactors.

At the same time, jaguar conservation has been detrimental to intra-community relations. Agreements with the *comisariado* that are perceived to happen covertly heighten existing social tensions, deepening distrust within the community and distancing members from one another. As divisions accentuate, the ability of the *ejido* to stand together is eroded along with their collective bargaining capacity (Peña-Azcona et al. 2021), leaving them vulnerable to already skewed negotiations with public and private actors. Dunlap and Sullivan's (2020) term accumulation-by-alienation is a useful prism to understand what this social dislocation means. They define alienation as *relational deficiency,* "the fragmentation, atomization and narcissistic individualism that many commentators understand to be sovereign in the neoliberal era" (Dunlap and Sullivan 2020, 568). It is the breaking of relationships to one

another and to the more-than-human exploited to turn a profit. Disjointed societies are weaker and "vulnerable to neoliberal environmental governance programmes which stifle and subvert alternative ecological visions" (Ibid., 564). These programmes mobilise material and psychological deficiencies to create a 'poverty-pushed, market-based environmentalism' that enables the expansion of green capitalism through market-based conservation instruments (MBIs), capitalising on desires for development and rampant inequality (Dunlap and Sullivan 2020). In Laguna Om, PES obtained from jaguar conservation is a good example. PES and other MBIs are predicated under a double premise. Firstly, that nature is a 'service provider' while humans are 'consumers' or 'users' of such services and, just like any other commodity in the market, we should pay for them with money (Sullivan 2009). Since we cannot pay nature directly, consumers pay the communities that own the ecosystems that provide the vital products (Ibid.). Secondly, as consumers are assumed to benefit from environmental services regardless of their geographical location, they can pay for the services they use remotely (Büscher and Fletcher 2015). Thus, funds from corporations that benefit from having CO^2 pulled out of the atmosphere or apex predators that keep jungles healthy find their way to local communities. Green cash is funnelled to already subsidy-dependent rural societies, keeping the inequality-driven market open for further investments.

Money from conservation programmes not only links *ejido*s with current environmental markets but also creates conditions for other industrial projects aimed at stimulating economic growth. Additionally to the social fracturing described above and the mobilisation of poverties as avenues for green capital, conservation projects solidify uneven dynamics that result in the 'oligarchisation' of power within *ejido*s (Peña-Azcona et al. 2021). Moreover, since local elites are themselves at a considerable disadvantage to other state and private actors, they end up negotiating consequential projects for their communities from precarious positions, facilitating territorial control and land appropriation. Such is the case with Tren Maya. The railway will pass straight through Laguna Om, reconfiguring socio-ecological relations all around the Yucatán Peninsula. At the same time, the train offers a material link between conservation and development, revealing the connections between conservation and the ravening capitalism it purports to resist. Let us now follow the train to see how the grid of neoliberal jaguar conservation articulates around the steel tracks.

Chapter 6 – Jaguars Are Made of Carbon

"If we come across a jaguar mother with a cub, it would be really dangerous, right?" said one of the young students in a worried tone. "Yes, it would go after you. And if it catches you…"[34] one of the elders ominously replied as he swatted the air with his right hand clenched into a claw. He looked relaxed, like he was just teasing. After all, no one had ever been attacked by a jaguar. Nonetheless, the student's worry was understandable. He had never been deep in the forest and knew very little about what they might find in there. Yet there he was, training to venture into the jungle.

It was the second day of a week of workshops where Toroto, a company that had recently reached an agreement with the *ejido* to certify carbon credits in their community forest, would train a provisional workforce to do a carbon baseline survey. The study aimed to determine how much carbon was already held by the 35,000-hectares of forest. It would also estimate how much CO^2 the area would capture every year via the magic of photosynthesis. Doing so, however, would not be easy. The job involved jumping on the back of a truck at sunrise, driving on rough roads for many kilometres, and then walking in the bush for hours, sometimes in knee-deep mud and water. Hacking away with machetes, workers would find their way to GPS-referenced sites and painstakingly measure every tree while repelling squadrons of blood-seeking insects. At the end of the day, they would return to the truck before being swallowed by the forest at dusk, returning home after dark just to do it all over again the next morning – Monday to Friday, for at least two months. And although the student's concern about encountering predators in the wild was relatable, listening to their stories made dehydration or leishmaniasis seem much more likely than running into a jaguar's den.

That afternoon, however, the atmosphere could not have been more peaceful. It was a fair day, and we were surrounded by fresh-cut grass. Tall leafy trees sheltered the group of students from the scorching autumn sun. After hearing a lengthy explanation of how carbon offsets worked and how they would operate in Laguna Om, they were happily learning how

to use laser measuring devices and a GPS radar. The younger ones, most of them in their early twenties, were more tech-savvy and taught others which buttons to press. The elders, some of whom knew the jungle so well that they could traverse it on foot without a compass, were discussing tree species and practical advice for walking in the *monte*[ix]. People seemed happy to be there, learning from one another.

I had not come to Laguna Om to learn about carbon credits. Frankly, the offsetting industry was not even on my radar. Nonetheless, after a couple of days of listening to the logic of the offsets and seeing how new technologies were paving the way for extracting more value from the trees, it became clear that all species in the forest would soon be engulfed by the same ambition – jaguars included. This chapter follows the idea that everything in nature can be measured and sold, 'selling nature to save it' as McAfee (1999) put it, which remains the dominant and institutionally supported pathway. Simultaneously, it traces the material consequences of that philosophy with the arrival of the new railway line known as Tren Maya. The infrastructure project connects a web of private and public actors that provides evidence of what many political ecologists have said before: conservation does not antagonise capitalist harm, it enables it. Together, market-based conservation and infrastructure advance a process of ecological colonisation that commodifies the more-than-human and intensifies state-corporate territorial control.

The chapter starts by offering a brief background on jaguars, infrastructure plans, and market-based conservation instruments in the region. It provides a preliminary overview of the state of affairs to place jaguars within a fuzzy ensemble of upcoming development. The net section, '*Bringing life to the market'*, uses the carbon offsetting logic to present a theoretical framework built from the critical contributions of scholars analysing neoliberal conservation and processes of infrastructural colonisation. '*Jaguars for sale*' then argues that Mexican jaguars are now on the market. Not actual animals, but jaguar tokens commercialised through state-of-the-art technology. Further, it presents some of the pressures that rural communities are subject to when offered to be part of market-based conservation schemes. Next, '*Conserving along the tracks*' connects the dots of a corporate-state conservation network

[ix] The bush.

tied together by the railway sleepers of Tren Maya. By linking conservation to infrastructural colonisation, it shows how environmental interventions complement the spatial and psychosocial management necessary for techno-industrial expansion. The last fieldwork section, '*Counting jaguars',* posits that scientific methodology and the authority with which it is deployed is fundamental for transforming nature into products. It demonstrates how the scientific obsession with scalability requires reducing non-human beings, jaguars among them, to a set of isolated, interchangeable units that can be sold in the market. The final section rounds up the discussion by analysing the chapter's findings in the light of what Dunlap and Sullivan (2020) call 'accumulation-by-alienation'. Overall, the following paragraphs trace a complicated grid of relationships, both tangible and ethereal, that seek to appropriate more and more of nature for the needs of capital expansion. There are many actors involved in this story. And as it turns out, jaguars are some of the main characters.

Celebrities for development

In Mexico, jaguars are all the rage. There is not a trendier animal. Their glaring eyes and debonair furs are everywhere, from advertisements for luxury real estate in the middle of the jungle to the back of the brand-new $1,000 MXN banknote. They are featured in lifestyle magazines, the logos of ecotourism companies, and official sustainable development dossiers. Although their natural majesty and cultural significance make them easy mascots, their ubiquitous fame is not an accident. The animal was chosen for its charisma and deliberately turned into a wildlife celebrity.

One of the core components of the ANCJ National Conservation Strategy is "a country-wide communication, education, and diffusion strategy that positions the jaguar as an emblematic species, emphasising its cultural and ecological relevance in Mexico […] contributing to changing attitudes towards the species and their prey" (ANCJ n.d.). The approach has been adopted by many conservation stakeholders. The Calakmul Biosphere Reserve's (CBR) Facebook page features a jaguar mascot that communicates the latest successes and actions in the park. WWF calls the big cats "ambassadors for the Americas" (WWF n.d.), and on 28 October 2021, production of a new documentary highlighting the work of WWF and a

corporate partner to preserve the species began in Laguna Om. Cultural significance and media exposure have made jaguars the face of environmentalism in Southern Mexico.

Conservation is fond of charismatic animals, and for good reason. Jaguars are considered umbrella species, which means that by protecting them and their habitat one protects thousands of other creatures (Rodríguez-Soto et al. 2011). They are also apex predators – ecological regulators and proxies for the health of an entire ecosystem (Araiza et al. 2007). In sum, they are ideal "surrogates for conservation" (Ceballos et al. 2021, 2), meaning that they are appealing, important, and much more likely to get public support than, perhaps, arboreal frogs.

Jaguars became even more prominent symbols at a crucial point in time. The current national government is focusing its development vision for the Mexican south on *megaproyectos*, large-scale infrastructure development. In 2018, it announced the construction of the Tren Maya, a new railway line of approximately 1,500 km that will circle around the entire Yucatán Peninsula (see Figure 5), connecting cities and villages in five states and crossing what is perceived as the most pristine jungle area in the country. From the start, the project was beset by lawsuits, indigenous resistance[x] (Obras por Expansión 2021; Desinformémonos 2021). There was also environmental uproar, primarily on behalf of jaguars. Activists argued that mandatory environmental impact assessments for the project were deficient or non-existing (Grupo de Análisis Ambiental 2020), and that the train endangered the most important jaguar population in the country (Domínguez 2019). Social media campaigns saying *Yo prefiero la selva* (I prefer the jungle) used jaguars to oppose the construction of the train. The spotted cats became the species to defend from impending ecocide.

Curiously, the government is also using jaguars to justify the project. They claim that not only will the train avoid fragmenting jaguar habitat, a major threat to the species (Roques et

[x] The project has faced resistance from many actors and for different motives. While indigenous groups largely seek to defend rights to self-determination and keeping possession of their land, opposition parties see sabotaging the train and concomitant policy packages as an opportunity to destabilise the sitting government. There is a vast spectrum of contradicting reasons why various groups are against the construction of Tren Maya.

al. 2016), but it will mitigate the project's impacts by reconnecting the landscape through wildlife crossings and the expansion of protected areas (Rangel 2022). Further, the Group of Technical and Operative Assistance (GATO) will run a "biocultural and scientific project" that aims to reintroduce rescued jaguars to their habitat using seven special environmental management units located along the railway line (Gobierno de México n.d.). Overall, the national government maintains that Tren Maya corrects the "environmental irresponsibility" of previous administrations and puts sustainability at the forefront of development strategies (Fonatur 2021). And while some researchers have highlighted the converging harms that infrastructure, land-use change, and urban expansion will have on the species (Marín and Cafaggi 2020), others see the train as an opportunity to organise development, minimise damage, and capitalise on the so-called "unprecedented interest" in environmental conservation from the federal government (Rangel 2022). The train's pledge to sustainability largely rests on saving the last Mexican jaguars.

Other compensatory strategies have been deployed to counterbalance the railway's environmental impacts. Payments for Ecosystem Services (PES) and Voluntary Conservation Areas (VCA) are promoted by the Ministry for the Environment and Natural Resources (Semarnat) and subsidiary agencies to propel "community participation, development, territorial reordering, and conservation" along the railway line (Quadratín 2021). But Tren Maya is not just a new mode of transport, it is a state territorialization project. It will articulate energy, agroindustry, tourism, timber extraction, and real estate development in a profound rearrangement of the Mexican south (Sánchez et al. 2019). The project aims to reshape social land tenure (GeoComunes, Torres-Mazuera, and Godoy 2020), activate financial instruments for property development (González 2020), assimilate predominantly indigenous territories into alternative – sometimes labelled 'eco' – tourism plans (Moya-Aguilar 2020), and "incentivize economic development in areas and regions that are not yet integrated to economic and tourist circuits" (Grupo de Análisis Ambiental 2020). Using 'underdevelopment' in the region as an excuse, infrastructure will integrate it into the state-corporate vision of progress.

Simultaneously, carbon credits are booming in the area, promoted by the state developers of Tren Maya (Vázquez 2021) and impelled by a global market that reached an all-time high in 2021 (Ecosystem Marketplace 2021). Although carbon credits are not new in the region, recent years have seen more *ejido*s entering offset agreements (Castro 2020b). For almost a decade, there had been attempts at launching carbon-offset projects in Laguna Om. All previous tries had failed, but in 2021, via its elected *comisariado* and following a voting session in the general assembly, the *ejido* signed a contract for the certification and commercialisation of carbon credits in their community reserve – 35,000 hectares of dense jungle. Increasing competition among certifiers has further precipitated changes in the rules of offsetting, while other schemes such as wetlands banking and 'blue carbon' offsets are planned to accompany the construction of the train to mitigate its impact.

Infrastructure development is thus entangled with conservation strategies "the proliferation of green economy projects" along the tracks of Tren Maya, such as "renewable energy, ecotourism, organic farming and carbon capture" (Comisión Asuntos Frontera Sur 2019, 46). The mandate, it seems, is to compensate the unavoidable ecological harm of the railway and to kindle 'sustainable development'. Jaguars are an appealing instrument to do that. One just needs the right financial tools to make them part of the business.

Bringing life to the market

Although carbon offsets are not my primary concern, let us briefly review their operative logic, as it offers a very clear entry point to the rest of the conservation-capitalist entanglement that is now engulfing jaguars too. Every tree captures carbon dioxide from the atmosphere. They do so to produce the energy they need to live and grow. Different species and trees of distinct ages capture CO^2 at different rates. However, about 50% of every tree's biomass is carbon, which means that half of the tree's weight comes, essentially, from the atmosphere[xi]. Now, to measure how much carbon is captured by 35,000 hectares of tropical rainforest – Laguna Om's community reserve – over one year, one does not need to count every tree; one can extrapolate. Random sites are chosen all over the area, where plants of a

[xi] These figures and the rest of this brief explanation come from come from Toroto's description of their offsetting plan.

certain size are counted, measured in height, width, crown length, and vigour, and then classified according to their species. Once the information of the roughly 300 sites is processed, statistical artistry can tell us how much trees will grow and how many tons of carbon they will remove from the air.

A rather simple equation follows. Every equivalent ton of carbon captured over one year is equal to one carbon credit. To be valid, i.e., tradable, carbon credits must be certified by a trustworthy organisation that ensures a sound scientific methodology was followed (Cavanagh and Benjaminsen 2014). In the case of Laguna Om, this guarantor is the California-based Climate Action Reserve (CAR), which verifies and sanctions calculations, and then brings the newly created bonds into the appropriate marketplace. Carbon credits, however, are not assigned a fixed value. They are subject to the sway of supply and demand and can be sold anywhere in the world through virtual platforms (Büsche and Fletcher 2015). Importantly, carbon credits can be sold and resold. Once they are swimming in the ethereal financial market, they can be "held as collateral for other investments, packaged with other environmental 'products', become the subject of environmental derivatives and so forth" (Büscher and Fletcher 2015, 287). What started as tree growth in a Mexican tropical forest eventually becomes a number, a line of code in an electronic financial wire. It is arbitrarily assigned value circulating to produce more value (Fletcher 2012), where prices are determined by the whims of supply and demand in abstract marketplaces and have little to do with the socio-ecological dynamics of the original forest.

What is happening here is not minor. Using a science-based protocol, photosynthesis, arguably the basic life-sustaining phenomenon on the planet, is transformed into abstract value that is then appropriated by certifiers who did little else to 'create' that value other than having the 'right' recipe to do it. By reducing natural processes to units of accounting – in this case, tons of sequestered carbon – offsets meant to compensate for the damage of harmful capitalist processes provide a newfound source of tradable value, a process authors call the 'financialisation of nature' (Fletcher 2012). Doane (2017) describes this process as Accumulation by Conservation (AbC), a particular form of environmental governmentality that, without the need to enclose space, encloses value and allows "organisations from the global North [to] appropriate land that is already well preserved" (Büscher and Fletcher 2015,

275). Büscher and Fletcher (2015) take this concept further to interrogate the role of conservation within a global system of accumulation:

> [T]he increasingly acknowledged reality of a certain finiteness to natural resources means that environmental conservation must become more central to a renewed stable phase of capitalist accumulation – hence, conservation's importance to the capitalist system as a whole. In this sense, the increasing intersection of capitalism and conservation […] might be understood as a transition to a new 'phase' of capitalist accumulation based on a conservation model – one that takes into account the need for environmental sustainability. (p. 274)

They identify a qualitative change in capitalism concerned with preserving depleted natural resources and, rather than halting expansion, count conservation as another accumulation strategy, one necessary to overcome capitalism's environmental contradictions. Their theory builds on growing literature that argues that 'mainstream conservation', the kind practised by big environmental NGOs, does not oppose deleterious capitalist development but rather accompanies or co-produces it.

The aim of this chapter is to show how jaguar conservation is increasingly entangled with such qualitative change in capitalism. As the construction of Tren Maya signals a change and possibly the intensification of community-market-state relationships, saving jaguars from extinction now permits capitalist expansion via a network of corporate, public, and non-governmental actors whose operations have material consequences in the region. Several instances of what researchers call neoliberal conservation (Sullivan 2006; Igoe and Brockington 2007; Büscher et al. 2012; Dunlap and Sullivan 2020) are important to elucidate this network and its operating logic. Firstly, as outlined above, the financialization of nature through carbon markets and other market-based instruments (MBIs) enclose value from natural processes and allow it to be traded across national borders, liberating capital from the investment on fixed resources (Büscher 2014). Financial instruments have streamlined 'green grabbing', "the appropriation of land and resources for environmental ends" (Fairhead et al. 2012, 237) and allowed value capture without transforming nature into physical commodities. Rather, value is now created from conserving 'natural capital' for non-consumptive use (Büscher and Fletcher 2015). Further, MBIs such as carbon offsets operate under a logic where damage to nature in one place can be easily compensated by buying conservation assets anywhere on earth (Büscher and Fletcher 2015; Dunlap and Sullivan

2020). In other words, doing harmful things somewhere is cancelled out paying for assumed benefits elsewhere. Further, speculators can buy and resell offsets for a profit, making them equivalent to any other share of stock.

Secondly, MBIs "insert a market-logic into human relations with and governance of the rest of nature. Our interdependence with the rest of nature is then framed as a supply-demand relationship" (Büscher 2021). This means that nature is conceptualised as a 'service provider' (Sullivan 2009), a pile of resources available for human consumption. Thus, like any other good or service, they must be paid for in currency that is, in theory, received by the communities who own those resources (Ibid.). Conservation programmes focused on cash transfers thus assume that the only reason people take care of nature is that it gives them money. Such understanding heavily influences how environmental interventions are designed while recasting local communities as conservation clients and conditioning the way they relate to conservation programmes (Peña-Azcona et al. 2021). Moreover, market-based conservation tends to ignore cultural and relational dimensions of nature, situating money as the preeminent way of valuing the non-human world (Büscher and Fletcher 2020).

The mercantile valuation of nature depends on a hegemonic way of knowing that we call science. Claiming to see from an objective perspective and with methodological purity (Haraway 1988), science has the authority to decide how the jungle is valued and interpreted. Further, as Tsing (2012) argues, science is obsessed with scalability, the ability to expand indefinitely by keeping inputs homogenous. It designs methodologies and protocols that turn nature into standardised data, self-contained units devoid of relations with other beings. Scalability, she eleborates, has allowed capitalism to commodify nature, recasting it as products that can be exchanged at market value. In other words, if the only measure of value is money and the only way of knowing is science, it is easy to assign price tags to the units that scientific methodology creates.

Big Environmental NGOs are fundamental in implementing the reasoning of market-based conservation on the ground. These organisations work to legitimize the environmentally disastrous actions of their corporate partners and can play multiple roles such as facilitating green investments, brokering consent for conservation initiatives, and deploying publicity campaigns that tie corporate actors with conservation efforts (Büscher and Fletcher 2020).

They obscure connections between corporations and environmental destruction (Büscher and Fletcher 2015). Further, the type of conservation advocated by big environmental actors can play a role in both ecological and psychosocial management of what Dunlap and Arce (2021) term 'infrastructural colonisation'. They argue that the proliferation of industrial technologies involves calculating ecological casualties, or else, deciding what parts of nature will be sacrificed to make room for new infrastructure. Moreover, infrastructural development carries with it a series of promises or 'enchantments' – increased mobility, new job opportunities, economic development – that create consent for a given project among local populations. Guided by the logic of compensating environmental damage, conservation can play a role in both arenas. It can offset the inevitable damage of new development, making it 'sustainable'. It can also offer economic gains and other benefits for local populations. Moreover, as with infrastructural expansion, the implementation of neoliberal environmental policies such as "PES schemes require considerable state intervention and private–public cooperation to establish projects and create frameworks for measuring and monitoring ecosystem impacts and administering payments" (Dunlap and Sullivan 2020, 557). Rural ecologies are thus subject to a multipronged offensive composed of new infrastructure that commoditises new aspects (Dunlap and Sullivan 2020) of nature, while MBIs and parallel policies are disproportionately targeted at local populations, designed to "change their livelihoods to meet biodiversity targets" (Buscher and Fletcher 2020, 291). Those who are at the bottom of the ladder come to bear the costs of extraction, while the capitalist organisations responsible for it get to profit from both destruction and solution.

Capitalism and conservation are tightly intertwined. In Laguna Om, their linkages reveal real-life interactions that have tangible material consequences. As it turns out, jaguars are a clear prism to understand the entanglements of railway tracks, cutting-edge financial markets, and a form of conservation that reduces all living things to products it can sell.

Jaguars for sale

"They are taking the jaguars, God dammit! That is the truth!"[35] exclaimed an ejidatario during a chat in his backyard. He was certain the same biologists that were working on jaguar conservation were capturing jaguars, transporting them out of the *ejido* and, presumably,

selling them for a profit. Rumours reported in detail what was happening: They had done it with a helicopter and a cage. Someone had seen it on the side of the road. No, they had sedated the cats and put them in the back of a pickup truck. There was a credible source that had seen everything. This was surely still going on. Otherwise, how do you explain that, at first, the *biólogos* said there were about ten jaguars in Laguna Om. Now they say there are only three. "They are taking them, that's for sure. Why else would they give no information about their dealings in the forest? When someone refuses to tell you what they are up to, you know something is wrong," said another.[36]

The same theory was told many times over, in different settings, by different people. Speculating that the conservationists who worked with jaguars were somehow stealing and selling the animals was a popular conversation topic in Nicolás Bravo. And although the gossip signals a profound distrust of scientists who do not engage with the community (see Chapter 4), it is also highly unlikely. Conservationists rarely—according to them only once[xii]—capture and relocate jaguars. The big cats, however, *are* being sold. They are counted, marketed, and traded in a way that requires not helipads and cages, but blockchain.

"This is the beginning of a more visible, more imposing carbon market," said the speakers of Toroto as they explained the new carbon offset project in the *ejido*. With the aid of a screen showing what looked like a geo-positioning app – a map of the forest covered by a grid of polygons resembling a beehive – they explained how a new digital platform, which they call the carbon credit Meta-Register, would facilitate selling offsets around the globe:

> Carbon credits used to be a simple PDF with a weird number on them. There wasn't any way to prove that that credit actually existed […] Now, each of these polygons represents one carbon credit. Now anyone can click on one or a hundred to buy them via a technology called blockchain, which is un-hackable, the future of banking. Anyway, now I [as a buyer] can know exactly where to find what I bought.[37]

They clicked on one of the mosaics on the map. A secondary display with folder icons appeared on the left side of the screen:

[xii] When asked if they had ever transported jaguars outside of the *ejido*, a conservation employee said it had happened once, when they got permission to relocate an animal that was causing serious damage to cattle to the Sian Ka'an Biosphere Reserve, a couple hundred kilometres north. Although it cannot be known for sure, it is possible that this operation was the origin of that rumour.

> Here, you will be able to see folders with the fauna in the area. You will see if we capture certain biodiversity with camera traps, what are the Sustainable Development Goals we are contributing towards, and so on.[38]

Thanks to this cutting-edge technology, jaguars would soon feature as part of carbon credit deals, making them more attractive for buyers in a competitive market.

> Ultimately, the buyer will choose from many carbon credits that are essentially the same, but maybe they will decide to buy here [in Laguna Om] because they feel a connection with jaguars. This project is not only sequestering carbon but is also conserving the habitat of many jaguars. That will have an impact on the price of the bonds too.[39]

Multiple things are happening here that allow us to see the logic of MBIs at work. Toroto's complex blockchain technology aspires to make carbon credits more *tangible*. After all, the existence of offsets depends on the legitimacy that these technologies and their accounting methodology provide (Cavanagh and Benjaminsen 2014). They are trying to convince buyers that they are purchasing something 'real' (Ibid). In practice, however, jaguars are being *abstracted* to be sold on global markets. This means that no actual jaguars are for sale. What is on offer is a form of jaguar token (Büscher 2021) that 'adds value' to carbon bonds. Thanks to their attractiveness to potential consumers, jaguars can be assigned a price tag, which adds to the monetary value of forests, coming from their ability to turn atmospheric carbon into biomass. Then, conscientious buyers who want to live in a world where jaguars are not extinct pay to 'protect' jaguars and their habitat. Even more, environmentally concerned buyers *should* pay to conserve species, as jaguars and other creatures provide so-called 'environmental services' investors enjoy even if they are far removed from them (Büscher and Fletcher 2015). Purchasers can then freely re-sell their carbon offset with jaguars attached at higher prices, like they would with any other unit of stock. In turn, the suppliers, i.e., communities that have jaguars in their territories, are assumed to conserve them because they receive monetary benefits. This process exemplifies how supply and demand have come to regulate our relationship with nature (Sullivan 2009) and how conserving biodiversity, part of 'natural capital', inserts newly abstracted value from conservation to global markets (Büscher and Fletcher 2015). Although it sounds innovative, using blockchain to commodify

nature is already a trend. WWF recently launched new Non-Fungible Animals[xiii] – their own version of infamous Non-Fungible Tokens (NFTs) – suggest other non-human beings such as jaguars, or at least tokenised versions of them, can also become conservation merchandise.

Simultaneously, money paid for tokens is presented as the primary reason why jaguars are preserved. Such reasoning is central to the offsetting industry. As Toroto speakers put it:

> No one used to pay for this [carbon sequestration]. It was something done for free by the forest. Now, we're opening a new cash flow for the *ejido* […] The project also contributes to changing mentalities. It's not the same to take care of something because you know it gives you money. You can teach your children that conservation is important not only for benefits that are hard to see, it also provides [money].[40]

MBIs actively seek to strip nature from any value different to currency (Büscher and Fletcher 2020), or at least make money the dominant one. Their business model depends on it. The more entrenched this logic becomes, the more *ejido*s will join carbon programmes, often in very disadvantageous conditions.

During a previous meeting among the *comisarios* of six neighbouring *ejido*s and representatives of the National Forestry Commission (Conafor), there had been a discussion about carbon offsets. In an almost exclusively male gathering – the only woman present did not speak once during the meeting – assistants voiced their concerns about the avail of joining these projects, which pullulated in the region. Some *ejido*s, they said, had accepted deals where middlemen kept up to 75% of the profits and now wanted out of their contracts. Others asked if the certifying companies had solid deals with buyers or if it was mere speculation. The discussion that took place in the Casa Ejidal, a spacious but modest rectangular building ineffectively cooled by ceiling fans, was highly sophisticated. Some of the assistants had a lucid understanding of stock trading and how speculators drove prices of stock up and down. Others had a clear idea of why *ejido*s should enter the carbon market. "Currently they are using us for free. The oxygen our trees are producing is being consumed by developed countries which are not paying a dime,"[41] said representatives of Laguna Om. Moreover, they reported that the deal they had accepted was better than their neighbour's. Laguna Om, they

[xiii] You can take a look at their website to see their new animal tokens: https://www.wwf-nfa.com/

assured, would keep around 70% of net profits[xiv], which would be used for the development of the community. Even more, Toroto was also endorsed by Conafor. "You can see all the relevant information on their website, it is very transparent. This is one of the companies we recommend working with," one of Conafor's representatives assured the audience. [42] This was not a minor statement. As one of the assistants let me know after the meeting, they felt reassured about their deal. "It gives you confidence. If a government institution analyses and says they are ok, then it means they are one of the good ones."[43]

Weeks later, I would learn that Toroto offered additional benefits. Not only were they putting a larger share of the proceeds in the hands of the *ejido*, but they were also willing to work in the already well-preserved community forest, something other companies refused to do. Further, as there was no binding contract with a single buyer, which usually means a fixed price for offsets, they said Laguna Om could potentially sell theirs for up to 50 USD each, depending on demand. Multiplied by 35,000 hectares of jungle, each producing up to four credits a year, it would mean an income for the *ejido* of millions of dollars per annum. That possibility, nonetheless, is remote. Although carbon offset prices vary widely – from under 1 USD to over 50 USD – the average price oscillates between 3 and 6 USD per ton (Hamrik and Gallant 2018). Moreover, other Toroto operatives said that no community in Mexico had sold a credit for more than 10 USD and that it would be unrealistic to make them believe otherwise. Additionally, unlike other companies, Toroto did not require Laguna Om to abandon concomitant productive projects in the jungle. State-sanctioned forestry activities could continue in parallel with carbon offset production, creating a double revenue stream for the community.

Carbon offsets promise the *ejido* huge financial prosperity. This creates a power imbalance in the way communities decide to participate or not in such projects (Peña-Azcona et al. 2021). Even though the *ejido*, as the owner of a strategic location to deploy environmental investment products (Ibid.), decided collectively in an assembly to be part of the project, offering (unrealistically) high returns affords the company enormous leverage. Now, jaguars–turned–tokens are part of that asymmetry too – an added ingredient in convincing

[xiv] The figure voiced kept changing depending on who mentioned it, but always stayed around the 70% mark.

people they can make money out of their forest. “It comes down to how you market your product. If you play your cards right, people will choose to buy offsets here because they feel a connection with jaguars. They like them. Maybe they even have a tattoo of one”[44], said a Toroto expositor half-kiddingly.

The competitive value of jaguars, though, is no joke. Being part of jaguar conservation programmes also gives *ejidos* an edge in the race for state-funded Payments for Ecosystem Service (PES). Conafor, part of the Ministry of Environment and Natural Resources (Semarnat), runs a permanent PES programme that aims to “compensate the owners of forest territories […] for accepting to maintain the forest cover and carry out conservation activities” (Conafor, n.d.). Conafor, however, has limited resources and prioritises areas with high biodiversity and iconic species. The picture of a jaguar on the official government website offers a clue as to which creatures are most likely to get funding. “Conafor has very little money. [*Ejidos*] are competing with other *ejidos*. So, who does Conafor give priority to? To the ones we say that have jaguars,” said a conservation expert. [45] Resources, however, not only come from the state. Dunlap and Sullivan (2020) point out that neoliberal conservation mechanisms often rely on the state to create regulatory structures that enable MBIs to operate. A concrete example is Conafor’s ‘concurrent funds for PES’, a figure that incentivises private firms – the ‘users’ of environmental services – to pay money that is meant to “link local communities to international biodiversity and carbon markets” (Conafor 2011). [xv] National and global NGOs can chip in too (Sosetec 2018). “Global Terra, Amigos de Calakmul, WWF, and Global Conservation are some of the organisations that are currently supporting jaguar conservation here,” says a conservation official during a phone interview[46].

Notwithstanding, conservationists interviewed for this project emphasise that access to cash payments are a primary reason why local communities continue to participate in conservation projects. “If you give people an economic incentive, then things work […] Incentives are there to save the jungle and prevent [them] from cutting the forest down” said an experienced

[xv] The concurrent funds programme has also allowed companies like Heineken, accused multiple times of appropriating water supplies (Rengeneración 2018), to assure their customers that they are “committed to protecting water in Mexico” (Portal Ambiental 2020)

conservationist working in the area.[47] This perception is important. Firstly, like conservation does in other contexts, it follows narratives of local degradation (Benjaminsen and Bryceson 2012). Secondly, conceiving impoverished local populations primarily as potential recipients of monetary transfers plays a major role in how conservation strategies are designed and financed (Peña-Azcona et al. 2021). Further, it contributes to pressuring them "to recognize and accept [conservation programmes'] terms as a stepping-stone for future subsidies." (Ibid. p. 120) As discussed in the previous chapter, the financial distress of local populations and their desire to receive money transfers gives conservationists an advantage in negotiating the conditions of environmental interventions. Thus, conservationists appear as the gatekeepers to financial opportunity, which gives them an upper hand in interactions with local communities. Moreover, conceiving conservation as basically paying for nature's services seamlessly articulates environmental goals with financial extraction. More still, it aids extractive development projects that permit industrial expansion into yet unassimilated territories. This integration materialises in Tren Maya. The federal government and even conservationists have presented the train as an opportunity to reconnect the landscape and create wildlife corridors, the last chance to rein in chaotic development and save what is left of the jungle (Rangel 2022). Following the conservation-capitalist nexus, however, tells a different story.

Conserving along the tracks

Already under construction, Tren Maya is scheduled for completion by the end of 2023. It will connect the Yucatán Peninsula's most populous cities and articulate economic growth plans in an area that, according to the president, has been for too long on the margins of development (Reyes 2021). More than a mode of transport for people and freight, the train is a project of territorial control tying together multiple forms of industrial expansion (Grupo de Análisis Ambiental 2020), militarisation of unruly territories (Paredes 2019), immigration deterrence and border security (Comisión Asuntos Frontera Sur 2019), and urbanisation, all wrapped in the name of green development plan. Crucial to making this process as *verde* as possible is complementing the construction of 1,500 km of concrete and steel with conservation strategies that will mitigate, i.e., offset its calamitous ecological outcomes. The tracks are a looking glass into an intricate network of alliances, discourses, subsidies,

incentives, and influences that pass the responsibility of taking care of the environment down to rural communities while permitting further capital accumulation.

Jaguars are a constant feature in this network, which one can start tracing at the Palmas field research station, located along a winding tarmac road that crosses Laguna Om's community forest from north to south. The work done here (see Chapter 4) has two main sources of funding. One of them is Amigos de Calakmul, a Mexican NGO ran by members of the National Alliance for Jaguar Conservation (ANCJ) that pays a yearly amount – around 20,000 USD – to the *ejido* for the use of their land for conservation and research projects. Moreover, representatives of both ANJC and Amigos de Calakmul have signed a contract worth close to 500,000 USD[xvi] (Castro 2020a) to design and build wildlife crossings that, they assure, will reconnect already fragmented landscapes. The ANJC is also frequently cited by state promotors of Tren Maya as proof of multidisciplinary cooperation and genuine environmental concerns. [xvii]

The second source of funding is Fundación Telmex-Telcel, the non-profit organisation of one of the largest corporations in the country, owned by former world's richest man Carlos Slim. In alliance with WWF, the foundation provides the necessary resources for studying jaguar ecology. Scientists get much-needed money for camera traps, logistics, and other expenses inherent to field research, while donors can put their logos on books, conferences and documentaries about the majestic jaguar (see for example Ceballos, Zarza, and Cercedo-Palacios 2016). The Fundación advertises its commitment to the preservation of big cats. Meanwhile, WWF reports progress in a decade-long strategy to create a continental jaguar corridor (WWF 2021). Fundación Telmex-Telcel, in turn, is part of Grupo Carso, a massive conglomerate that counts among its enterprises the construction behemoth Operadora Cicsa, which in 2018 received a 900 million USD government contract for the construction of Tren Maya's Section 2 (Gobierno de México 2020). Mining, oil and gas, and a retail emporium

[xvi] ANCJ had originally published on their website a press release that clarified their position and addressed a possible conflict of interest. The release has since been removed.

[xvii] ANCJ members have stated they are not either in favour or against the train and are rather part of an independent and voluntary assessment council (Lozano 2018). Nonetheless, state agencies promoting the train have repeatedly mentioned ANCJ as "allies" that legitimise their environmental concerns (Fonatur, n.d.).

are also part of the consortium's portfolio. The connection between big business and conservation here is transparent. The same company that will make millions from an ecologically disastrous project invests in conservation to keep a green public image. It is also hardly surprising. Global environmental NGOs like WWF have long been criticised for their willingness to partner with corporations and sanitise their environmental record (Büscher and Fletcher 2015). However, WWF and its allies play a perhaps more important role in setting a jaguar conservation agenda that aligns with vested capitalist interests.

As highlighted in Chapter 2, the Jaguar 2030 New York Statement champions "greater investments in nature-based solutions for development challenges by using public resources to incentivize private financing […] such as payments for ecosystem services, subsidy reform, green bonds, and sustainable commodity production" (ANCJ 2018, 8). In other words, with the state as a mediator, investors can either pay for nature or create products that make nature pay for itself (Dunlap and Sullivan 2020). This mandate is followed to the letter in the rest of the conservation-capitalist network. As noted above, environmental state agencies like Conafor focus on PES as a primary conservation mechanism. Flagship species then give rural communities increased chances of receiving funds. Interestingly, PES is also one of the primary mitigation strategies of Tren Maya. According to the latest national PES rules, *ejido*s that intersect with the route of the train will be prioritised to protect the flora and fauna of a highly biodiverse region (Conafor 2021). Conservation funds are also funnelled to communities that have been 'relocated' to make space for the tracks.

Conservation areas are also part of the mix. The train puts special focus on Voluntary Conservation Areas (VCA), "places of great natural wealth that indigenous peoples, civil societies, and other legally constituted organisations allocate for environmental conservation" (Semarnat n.d.). The VCA figure was originally established in 1996 when the neoliberalisation process in Mexico was in full flight (see Chapter 4). It permitted rural communities to "safeguard their land from development projects and public infrastructure" (Ibid.). Modelled after the UNESCO Biosphere Reserves, VCA are not restrictive, which means that the rules are written and approved by the community as a whole. People can continue with their normal activities and establish management guidelines that promote

"sustainable use of natural resources […] and facilitate access to markets via certifying [nature-based] products or services" (Ibid.). They were presented simultaneously as a way to conserve ecosystems and bring communities a sustainable source of income.

Laguna Om's own VCA was inspired by jaguar conservation. Personnel of the Calakmul Biosphere Reserve (CBR) worked closely with the *ejido* to preserve the largest community forest massif in the Peninsula and integrate it to a projected wildlife corridor they call *Paisaje Jaguar* (Jaguar Landscape). Further, VCAs are crucial for keeping extractive development in check. As a CBR officer puts it, "[VCAs] might be regarded as parallel to Tren Maya. But most importantly, they work to safeguard [land] against any form of land use change or selling land for urbanisation."[48] He is not wrong. The problem is, communally held land already did that. Before the *ejido* was privatised in the early 1990s (see Chapter 2), it was not legally possible to alienate and develop communal land. Extractive development, which well-intentioned VCAs now must prevent, required integrating *ejido*s to land markets and gradually eroding communities' capacity to keep their territories (see Chapter 4). Thirty years later, the development planned around Tren Maya not only necessitates privatising more land (GeoComunes, Torres-Mazuera, and Godoy 2020), but it also presents itself as the promotor of environmental solutions, like compelling rural communities to 'sustainably' manage their resources and create 'voluntary' conservation areas. With one hand, it baits *ejido*s into joining trust funds that seek to financialise and alienate their land (González 2020). With the other, it purports to help communities keep urbanization and land-use change in check. We have come full circle – the paradox where capitalist markets are presented as the panacea to capitalist harm (McAfee 1999; Büscher and Fletcher 2020) is, once again, complete.

Deployed along the train tracks, PES and VCA become part of an infrastructural colonisation process, which Dunlap and Arce (2021) describe as the reorganization of environments to accommodate the existence of techno-industrial infrastructure. Such a process has both ecological and social dimensions. The first refers to a calculation of what part of nature will be sacrificed to accommodate development. In the case of Tren Maya, what areas of jungle will be cleared to build anything from rails and stations to airports and a Formula 1 racing track (Vázquez 2021). Land will be expropriated, and people will be displaced. However,

this is all fine because they will receive money and nature will be protected elsewhere by local people who are simultaneously conceptualised as the recipients of government funds, the legitimate – albeit misinformed – guardians of territories, the receivers of environmental education, an underqualified workforce, and the future inhabitants of new urban centres (Paredes 2019). The state, using its 'territorial control attributions', will "apply corrective infrastructure" (Ibid.) to organize the region and spur economic growth, while convincing rural communities to compensate for the damage.

On the other hand, infrastructure and its environmental mitigation plans deploy a series of social 'enchantments' that create consent for development plans (Dunlap and Arce 2021). And they are effective. The multiple promises of the train mean people in Laguna Om are looking forward to its arrival. "It is my dream to work in Tren Maya," said a young man who is training to become a tourist guide. "Once the train arrives, it will boost development in the *ejido*. That is why I am studying, preparing. I don't want to be left out."[49] The sentiment was widely shared in the village. There are high hopes that the train will bring jobs and other economic opportunities, a narrative vigorously promoted by multiple government agencies. When they arrived at the Casa Ejidal to talk to *ejido* leaders, the representatives of Conafor apologised for the absence of a senior officer who had missed the meeting because he was negotiating land for a new airport complementary to the train. "He is very sorry he cannot be here today, but this is good for [the other *ejido*], it will greatly help the development of their community."[50] The *comisario* and his team are also vigorously negotiating with the National Army, in charge of building the section of the tracks that will go through the community, to bring new complementary infrastructure to the *ejido*. In exchange for a new public clinic and state-funded bank, Laguna Om will donate around a dozen hectares of land to build a train station and a military base. The latter is part of a strategy to increase armed forces presence close to the southern border, where illegal migration, drug trafficking, and Zapatista insurrection create trouble for the federal government[xviii] (Paredes 2019; Tourliere 2021). Nonetheless, giving up some land seems like a small price to pay for everything the railway

[xviii] Although plans for military expansion parallel to Tren Maya are widely known (Tourliere 2021) the project of building a base in Laguna Om is still uncertain. The sources for this claim are interviews with people carrying out reported negotiations with highly ranking military officers. Such meetings, however, happened behind closed doors and the actual content of them is known only through reported experiences.

vows to bring. “What’s important is that all the projects we have – the clinic, the train, the bank, the carbon credits – become an investment for the *ejido*,” said the *comisario*.[51]

Laguna Om’s VCA is also a potential business opportunity. After that meeting at the Casa Ejidal where carbon offsets were discussed, the *comisario* and his closest collaborators led the rest of the *ejido* representatives on a field trip to the community forest. Walking among trees 20 metres high, we climbed along a path that led to a lookout at the top of what surely was a buried Maya pyramid. The view was breathtaking. The tree-covered land looked like a mushy carpet that rolled gently in every direction, fading gradually behind light curtains of drizzling rain. “This place has me enthralled!” exclaimed jubilant one of the members of the *comisariado* while he and other *ejido* leaders talked about plans to integrate a community-led tourist circuit. The potential for that place was immense, they said. If they managed to organise their communities, they might be able to receive funding from Fonatur, the national tourism directorate and the institution primarily responsible for the construction of Tren Maya. Soon, many tourists would come, eager to experience the wonders of such a captivating landscape. It was easy to agree. We were surrounded by what seemed like the quintessential tropical Eden. On our way back, we even had spider monkeys following us around, swinging from the branches above us. “We also have loads of jaguars!”[52] the gleeful man exclaimed. Surely, many tourists would like to come and see them.

Counting jaguars

How do you know there are jaguars in the jungle? Well, there are several ways of finding out. First, and perhaps most obvious, you see them. You see their tracks, their faeces, and the animal carcasses they leave behind. And if you are very lucky, you might even get a glimpse of one, a split second of a spotted tail bolting past the beam of a torch. Until recently, stories of sporadic encounters were the only registers of jaguar presence (Ceballos et al. 2021). Now, a highly sophisticated method involving the titanic labour of setting camera traps deep in the jungle, identifying individuals, and then extrapolating occurrences (Ibid.) gives us a comprehensive picture of the big cat population in the country.

This methodology provides certainty of something that is well-known to local people – jaguars are around. "We know they are here. They regularly interact with my animals. We have them monitored too, just by different means," says a local cattle rancher in Laguna Om.[53] Many people in the *ejido* have had close encounters with the cats. Some of them hear them "horribly bellowing" in their ranches late at night. Others have seen them rapidly crossing the road to the community forest. An eighty-year-old man who lives alone by the edge of the jungle even tried to shoot one after it ate his five dogs, grabbing them one by one from the threshold of his wooden hut. These stories are fascinating. However, some would argue that they are not very dependable. Especially if you want state and private funds to come your way, stories are not enough. Accessing the monetary flows of conservation requires reliable data obtained with specialised analytical tools, clearly defined frameworks, and carefully calibrated methods – what we know as Western science.

Science can spur the volitions of conservation agencies and NGOs because, unlike local anecdotes, it has a claim to objectivity, or else, the authority of producing valid, universal knowledge. As Haraway (1998, 577) argues, "science is rhetoric, a series of efforts to persuade relevant social actors that one's manufactured knowledge is a route to a desired form of very objective power." In this case, science provides the power of channelling conservation money. We can see this in the requirements for accessing some of the cash transfers we have previously discussed. In Laguna Om, a Unified Technical Document, comprising a detailed forest inventory, was necessary to get a sustainable forestry management permit from Conafor. An Environmental Management Plan, methodically counting flora and fauna, allowed the community forest to become a state-approved VCA, which then permitted access to PES and other subsidies. Carbon credit certifiers supplied a strict protocol to measure carbon baselines and tree growth, thus opening a financial line between the community and buyers of green bonds. In other words, if you want nature to bring you money, you need a team of experts with the technical authority to produce the right kind of knowledge.

Science also has the faculty of turning complex ecosystems into data that the market can read. To see this translation, it helps to follow Tsing (2012, 505) and think about scalability and

how it is applied to nature. She defines scalability as "the ability to expand – and expand – without rethinking basic elements". Scalability requires precision, or else, reducing heterogeneous elements in a chaotic setting to uniform, self-contained blocks ready for further expansion. To work, scalable models, the kind that can be neatly expanded, contracted or applied to a different setting, must keep inputs standardised, excluding biological and cultural diversity from their design (Tsing 2012). Carbon offsets are a good example to see what Tsing's scalability means. As discussed earlier, what carbon offsets essentially do is transforming the enormous relational intricacies of a forest into items markets can count and trade. Employing a standardised method, they reduce a life-sustaining process such as photosynthesis to homogenous units – in this case, tons of CO^2. The protocol for certifying carbon credits, developed by an institution with scientific authority, does not take into account additional complexity. It does not worry about different cultural values attributed to the forest, the sense of place and belonging it creates, or the countless world-making projects that a myriad of organisms carry out within it (Tsing 2017). It is interested in a single outcome from predetermined inputs – tree dimensions measured in metres and species christened in Latin. Thus, it can be applied with minimal tweaks to 200 or 35,000 hectares of land. It is employed the same in temperate forests and torrid jungles.

Scientific scalability has both the power of simplification and perpetual expansion, which match perfectly with the needs of the capitalist economy.

> Thinking through scalability has allowed [investors] to expand capitalism… [T]hey devised all kinds of new commodities, both material and virtual. Eventually, they posited that everything on Earth—and beyond—might be scalable and thus exchangeable at market values. (Tsing 2012, 514)

Through scalable accounting, forests and other on-site pieces of nature are being traded in remote markets even without being removed from their place or physically transformed at all (Büscher and Fletcher 2015). There is no need for that when you can capture and trade their value through financial instruments. Jaguars are not very different. Like most science (Tsing 2012), pioneering studies such as the National Jaguar Census are obsessed with scalability. Considered one of the most prominent attempts to assess the big cat population and inform

conservation policy (Ceballos et al. 2021), the project offers baselines for estimations at multiple scales and confirms at a national level what other continent-wide research has argued. It also borrows from other studies done with different rainforest animals. Tigers and pecaries, giant anteaters and squirrel monkeys can all be counted using similar methods (Tobler et al., 2008). This can only happen if their inputs are equivalent – individuals, self-contained beings, devoid of relations that would infinitely complicate the design (Tsing 2012). Jaguars and other non-humans become data points, dots on a map, the complexity of their stories stripped away. Then, using the right technology, they can become tradable tokens. They are kept in virtual folders and sold to companies half a world away that will argue their damage is being offset, compensated by the pieces of nature they are paying for.

None of this would be possible without conservation science and its prodigious technical ability. By objectively counting and dissecting nature, researchers can make what they call 'inventories' of species (Tobler et al., 2008). Once tallied, animals and other non-human creatures can be abstracted and tokenised, becoming products fit for financial markets. Even the language of conservation is telling. Inventory: "A complete listing of merchandise or stock on hand […] made each year by a business concern" (Collins English Dictionary n.d.). There is no question that there are good intentions in conservation. However, as this chapter has shown, its ties to the economy that continues to devour ecosystems make it part of capitalist expansion. Exploring jaguar conservation programmes in Laguna Om shows as much. Currently, conservation is not protecting nature, it is counting it to sell it.

Discussion and conclusion

This chapter has made one central argument: jaguar conservation is inextricably linked to capitalist expansion, a relationship that we can see by interrogating infrastructural development in Southern Mexico. Rather than a barrier to the harmful industrial economy, as it is often portrayed, big cat conservation is an instrument for expanding it, a gear in the same global system that is driving the species to extinction. We can see this connection in multiple instances. Firstly, new technologies developed for carbon offsets turn jaguars into tokens, digital products sold in stock markets. Simultaneously, promises of economic gains entice local communities into accepting market-based conservation programmes in their

territories, often from disadvantageous positions. Next, the chapter followed a capitalist-conservation network articulated by the tracks of Tren Maya and elucidated how conservation complements the environmental and psychosocial management necessary for infrastructural colonisation. Further, it exposed how MBIs are presented as cures to neoliberal devastation. Finally, it argued that conservation science is instrumental in commodifying nature. It demonstrated that dissecting it into isolated units assumes that everything can be priced and sold, thus creating new nature products devoid of any relational value. Science is treating ecosystems like a stock of products that must be purchased to prevent them from being destroyed. In doing so, it gives us no way out of a murderous economy. Destruction and salvation are one and the same.

But is my assessment fair? Many will argue it is not. Conservationists I have had the fortune to speak to will probably say that they have done what they can despite the insurmountable odds against them. That there have been successes notwithstanding the perils and that it is better to work with the system than not work at all. I do not deny their commitment. As I have mentioned before, the intentions of individuals are not the object of analysis here. However, in the face of the relentless advance of a system that devours it all, self-assurance is not enough. Moreover, as Büscher and Fletcher write

> Many conservationists…do not see nature as an inherent part of the global economy, but rather … 'pragmatically' tie nature into discourses and practices of capital accumulation and economic growth to raise the profile and importance of environmental conservation and its practical application in 'reality'. (p. 282)

As this chapter has shown, there are clear ties between conservation and capital accumulation in the network of 'sustainable' or 'green' development that Tren Maya allegedly represents. Conjoined by the railway tracks, an 'environmentally concerned' form of capitalism counts conservation as yet another form of accumulation, or rather part of the overall accumulation process (Büscher and Fletcher 2015). It uses financial instruments to 'compensate' for environmental damage and sell nature without the need to physically transform it. Material extraction is thus justified by a different form of extraction that encloses value while it 'conserves' natural resources in place. That web of conservation actors is glued together by state institutions that actively promote public-private partnerships, a common feature in

neoliberal environmentalism (Dunlap and Sullivan 2020). PES and carbon offsets require regulation that facilitates the flow of money and incentivises rural communities to participate. Government agencies create normative frameworks and legal avenues to liberate the flow of capital, linking communities with global markets. They legitimise corporate environmentalism and endorse the intervention of private firms and NGOs. They also make benefits from environmental programmes contingent on accepting development plans, thus tying conservation and industrial expansion together in the same development package.

There are two levels to this intricate public-private network. Firstly, there is an ephemeral web of endorsements, virtual stocks, blockchain code, alliances, negotiations, and agreements. The second is material and involves cash payments, square meters of land, forests, jaguars, and very soon, concrete techno-industrial infrastructure. Dunlap and Sullivan (2020) highlight both the objective and psychosocial dimensions of neoliberal environmental governance by offering the term 'accumulation-by-alienation'. They concur in the existence of "complicated public-private dynamics" that link environmental performance to processes of territorial governance and bring about the "intensification of governmentality through which the state is enrolled and extended through market-oriented provision in various ways" (p. 557). Tren Maya represents such intensification. By applying 'corrective infrastructure', it explicitly aims to engulf land and people into expanding capitalist circuits. Simultaneously, environmental concerns are cited to deploy new regulations on rural territories. In this net of corporate-state-community relationships, jaguar are mascots, wildlife celebrities representing the majesty and purity of an imagined, distant nature that must be preserved.

Dunlap and Sullivan's (2020) use of the term 'alienation' is also useful to grapple with the consequences of being distant and disconnected. They define it as 'relational deficiency' to encompass broader "indifference, instrumentalization, reification/fetishism, absurdity, artificiality, isolation, dissociation, disconnection, meaninglessness and impotence," (p. 568) all of which are fundamental to the commodification of everything. If you want to recast nature as a range of products, the trick is to fragment, rupture, and disconnect humans and non-humans from each other—affirming the Cartesian split. Then alienated nature can be objectified and paid for. Once pre-existing relationships with the more-than-human become irrelevant, dissolving all ties but that of the consumer-provider, nature can be unemotionally

measured and priced. Jaguar conservation is currently part of such an alienation process. It is immersed in the collective delusion that money reflects value. Rather, that money is the *only* value, and that all things, all creatures should be appraised in dollars. Life does not come from ones' habitat, or ecosystem, but from capitalism. Capitalism is further presented as the inevitable evolution of economics, making us believe that all commodified relationships that emerge from it are 'natural' (Büscher and Fletcher 2015). That is just the way it is, right? Everything should be dismembered into parts that we can trade. Break down a forest, for example, and you will see particles of CO^2 – interchangeable, immutable units ready for the market. And if you can do this with trees the way carbon offsets do, you can do it with any living being. Follow that logic and you will come to an inevitable conclusion: jaguars are also made of carbon, and if carbon is worth money, we might as well sell them.

This logic remains under challenged, normalised, and accepted despite its detrimental outcomes. The thread that connects this chapter and the next, which I promise is much more hopeful, is therefore a categorical affirmation: those who think that people only conserve nature because they get money from it are dead wrong. There is nothing natural or inevitable about converting everything into currency, and there is a myriad of reasons why people care for the more-than-human beyond cash. In fact, many of the values that tie humans and non-humans openly oppose the compulsion of measuring everything in monetary terms. To realise this, it was enough to sit among the people who had come to that grassy, tree-shaded site to learn how carbon offsetting would work in their *ejido*. In the weeks that led up to the workshops, there had been effervescent backyard discussions about not participating in the talks at all, primarily because the pay offered by Toroto was rather poor. People had still showed up. The money was not ideal, but there were other things to be excited about. "I like to come to these talks and pay attention because I learn new things. The old *ejidatarios* know a lot," said a young woman. "Are there many species that are both medicinal and yield timber?" asked another student. "Oh yes, very many," calmly replied an experienced-looking man with a hand gesture that indicated prodigious quantity. Unlike those of the university students, his hands looked strong, callused from working the earth. Maybe, the young ones hoped, this was their chance to grab a machete themselves and get closer to their land.

Chapter 7 – Finding Space for 'Living With'

"Imagine if we all grew food in our backyards. We would all eat," assured a young woman who, after being away from the *ejido* while she pursued a master's degree, was back home trying to getting reacquainted with her village.[54] If her and her neighbours used the space they had available in their homes, she thought, people would have food available all year round. It was easy to visualise her plan. We were sitting in her mother's backyard, a generous dark-soiled space shaded by a tall tamarind tree and sporadic banana plants. When I walked in, she was preparing soil to sow more habanero chilli seeds and top up the dirt of the plants that were already about 30 centimetres tall. If she could organise a handful of people to grow a variety of crops, she explained, they would all be able to share them and have sustenance guaranteed, practically for free. Pumpkins and beans, bananas and corn, chillies and tomatoes. There was sufficient land in just a few gardens to harvest enough produce for a decent diet.

When I saw her again, days later, I had to ask more about her idea. To me, it sounded like a food revolution: grow it together, share it for free, and revive the declining local economy. I found what she said next confusing.

> We could start a chain because this idea isn't meant to stay only in the village. It's larger than that. You know, if you have a [university] degree you can start your own brands, and that isn't only going to be distributed locally, it can go to hotels and restaurants too… I'm going to pay [people] for the produce I cannot grow myself and [bring it] to commercial chains.[55]

I did not understand. Was her plan to support shared economies or to scale up a business? The ideas seemed antithetical – private gain versus common good. But perhaps that was not the point. Maybe the idea signalled a train of thought that had not yet broken free from the need to turn a profit, hardwired in our brains by the omnipresent capitalist economy. Maybe, when looking for alternatives, we should be comfortable with apparent contradiction and carefully trace the relationships that offer ways forward. Maybe those relationships can influence how people live with jaguars too.

This chapter explores such connections. Guided by the stories that link participants to jaguar conservation, it uncovers reasons to care about the more-than-human that refuse to be appraised by cold currency. Section 2, *Sparks of conviviality*, starts by illuminating how political ecologists and decolonial theorists suggest that we investigate alternatives to capitalist structures and mercantile valuations of nature. Further, it offers the idea of 'living with' humans and non-humans as a way to reconstruct conservation practice. Next, *Retracing histories*, outlines the significance of hunting in the *ejido* and how it relates to forest management activities and jaguar conservation. It also provides an overview of how ecological and economic decline over the past decades are experienced in Laguna Om. The three following sections are a search for convivial meanings of conservation in context. They present socio-cultural values – namely gratitude, heritage, and friendship – that are alternative to market-oriented schemes, and show how they emerge haphazardly within existing hierarchies. In short, while previous chapters told the story of alienation, this is the story of reconnection.

Sparks of conviviality

How does one find hope amid the rubble? How do we go about looking for alternatives in a world that seems so engulfed by the unifying illusion of capitalist modernity? If you asked Anna Tsing, she might say: "to look around rather than ahead" (Tsing 2017, 22). In her book *The Mushroom at the End of the World* (2017), she proposes we seach beyond the tired narratives of linear progress and search for 'indeterminate encounters' – accidents, if you will, that breed collaboration in unexpected ways. These encounters transform the landscapes disturbed by human presence into breeding grounds for diversity and alternatives that unsettle the structures of 'development'. The emergence of such agitating perspectives, however, is not neat. It is contradictory and chaotic. In the words of Anibal Quijano (1999), making sense of them requires:

> acknowledging the existence, or rather the co-existence, in the same history and the same socio-cultural space, of other patterns, even of elements not clearly placed within a discernible pattern and that are not only integrated to the dominating pattern but are also different, conflicting, and alternative. (Quijano 1999,146)

It is those rebellious yet hazy possibilities that sneak past a system he calls coloniality, the "practices that derive from the matrix of power created by colonialism and are still at work within contemporary, post-colonial societies" (Álvarez and Coolsaet 2020, 52). Crucially for this chapter, the system Quijano describes has two distinct dimensions: 'coloniality of power' and 'coloniality of knowledge'. The former speaks to the racial differentiation that makes non-Europeans inferior to Europeans. Further, it refers to the use of modern (i.e., Western) institutions to regulate labour, resources and, importantly, "the relationship between peoples and nature" (Álvarez and Coolsaet 2020, 52). The latter, 'coloniality of knowledge', sheds light on the hegemonic way of knowing – Western science – that claims superiority and universality over 'limited' local knowledge (Quijano 1999). Coloniality, then, might be understood as the ongoing enclosure of all ways of knowing and being into a Western-centric hierarchy that spawned alongside capitalism and continues to expand. Wolfe (2006, 388) further reminds us that "invasion is a structure, not an event." It is the continued socio-ecological conquest (Dunlap and Sullivan 2020) – via infrastructure, green governmentality, and financial instruments – that keeps devising new ways of conditioning our relationships with nature, making even the urgency to preserve it a tool for accumulation (Büscher and Fletcher 2015). Nonetheless, within this capitalist industrial entanglement, there are relationships that refuse to be assimilated into the system.

There is hardly any place on Earth that is untouched by human action.[xix] Even more so, the notion of so-called 'pristine nature' has been – and continues to be – used as an excuse to appropriate land in the name of capitalist-colonial endeavours (Cronon 1996; Fletcher and Toncheva 2021; Ogada 2019). Often, what we have is a collection of disturbed landscapes 'created' by industrial interference where, despite everything, biodiversity endures. Tsing (2012, 95) calls this 'slow disturbance', "anthropogenic ecosystems in which many other species can live". The tropical forests of the southern Yucatán Peninsula are such ecosystems. The jungle is certainly not untouched. It is, in a sense, human-made – the result of migrations, resettlements, and industrial logging (see Chapter 1). The population of Laguna Om is itself

[xix] Although I use the word 'human' here to introduce Tsing's concepts, there is a long and rich debate about who do we mean by human and the necessary differentiations and responsibilities relating to the current ecological crises. How do we call this era of ecological decline? The Anthropocene (Lewis and Maslin 2018), the Capitalocene (Moore 2017), the Necrocene (Batalla 2020). These differences are important to see colonial dynamics at play.

surprisingly heterogeneous. People from all over the country found here new homes and weaved novel relationships with the landscape and the creatures in it. It is a place of 'contaminated diversity' (Tsing 2017), where biocultural diversity accounts for histories that converge at a certain point in time, a process in which "both indigenous peoples and migrants can participate" (Tsing 2012, 95). Thinking through contaminated diversity we can ask: What ties the diverse inhabitants of Laguna Om to their land? What kinds of relationships can we find with non-human natures and how have these been weaved? Is there a special connection with jaguars? If so, what is the nature of that connection?

In other words, what we are looking for are ways of *living with* nature. This last idea inspires what Büscher and Fletcher (2020) call convivial conservation. Based on Ivan Illich's (1973) concept of 'conviviality', they propose reconstructing environmental practice for a post-capitalist future, detaching it from the growth-driven economy, and fundamentally challenging the political economic drivers of environmental degradation. They envision:

> a conservation that does not separate humans and nature – as the mainstay of conservation through protected areas has long done and continues to do – but instead rejects this false dichotomy. It focuses on a conservation that […] enables humans to truly 'live with' biodiversity […] [It] emphasizes not economic cost–benefit calculation but affective affinity and other ways of relating with nonhumans irreducible to destructive capitalist ratio. (Büscher and Fletcher 2020, 260)

Convivial conservation follows Illich's core tenets: freedom and responsible interdependence; participatory and democratic decision-making; and using tools and knowledge for the common good, not individualised profit and industrialised production (Krauss 2021). It proposes diverging from commodifying visions of nature, such as 'natural capital' and 'environmental services', to find other was of engaging with 'nature-as-commons' or 'nature-in-context' (Büscher and Fletcher 2020). Thus, conservation should transition from "rendering nature's value visible" to the market through financial instruments and technocratic decision-making, to seeing 'embedded-value', where nature gets its worth from non-monetised engagements, "integrating the uses of (nonhuman) natures into social, cultural, and ecological contexts and systems" (Ibid, p. 283).

Concretely, convivial conservation offers five 'elements of a vision' that structure the authors' proposal. Three are especially relevant here. Firstly, they argue for changing

‘protected areas’ to ‘promoted areas’, “fundamentally encouraging places where people are considered welcome visitors, dwellers or travellers” (Ibid. 265). Promoted areas “do not mean that every action is possible or desirable.” Instead, they are an invitation for democratically defining convivial uses of nature that build “long-lasting, engaging and open-ended relationships with nonhumans and ecologies” (Ibid. 265). This framing sparks an interesting conversation considering that Laguna Om already has a Voluntary Conservation Area (VCA) which claims to consider local uses of natural resources, while simultaneously promoting market-based conservation instruments (see Chapter 5). Secondly, Büscher and Fletcher (2020) call for revaluing ‘everyday environmentalisms’ that reconnect nature to quotidian meanings and values, rather than alienating it as something spectacular, yet remote. Thirdly, they propose transitioning from a “privatised expert technocracy to common democratic engagement” that permits “the value of natural resources [to] be determined locally rather than in abstract global (and increasingly algorithm-based, computerized) markets” (Ibid. 278). Expanding this concept into the local sphere, we might suggest democratic engagement should also mean integrating locally marginalised peoples into decision-making processes, thus challenging the power structures that anchor market-oriented conservation strategies.

Maybe, then, refocusing jaguar conservation could play a part in rebelling against the destructive capitalist system altogether. From a decolonial perspective, conservation should become part of a strife to oppose an economic model that “seeks to assimilate indigenous or rural people’s, among others, into a market-dependent society though the asymmetric ‘inclusion’, where the ‘colonised’ are placed at the base of the hierarchic pyramid” (López Barreto 2021, 34). It can be part of a search for ‘relational ontologies’, “dense webs of interrelations […] enacted through an infinite series of practices of all kinds of beings and life forms” (Escobar 2016, 23). Conservation can – and should – look for anchors in meaningful interactions between humans and non-humans, complementing the task of radically questioning modern/colonial ways and institutions, and allowing rural communities to rediscover and revalue their identity and their local ways (López Barreto 2021). Tracing the webs of interdependence between humans and non-humans requires engaging with personal experiences and local histories. In other words, ethnographic engagement, or as Tsing (2017, 37) calls it, “to listen to and tell a rush of stories”. Those stories begin here.

Retracing histories

When her father was young, jaguars used to walk on the tracks. The village was not inhabited by more than a few dozen people and there were no paved roads. The few homes that stood were surrounded by jungle and people were free to come and go as they pleased, maybe even sleep in the shade of a tall tree. And the forest was full of sounds. "Back then, there were many animals – wild turkeys, pheasants, peccaries – and people would hunt to eat. That was the tradition," remembered a woman whose family had arrived in Laguna Om in the 1960s.[56]

The time she describes sounds peaceful. Industrial forestry had not yet properly started, and the colonisation project of Quintana Roo (see Chapter 1) was still about to begin. People made a living from the land via small-scale agriculture, rubber harvesting, and subsistence hunting (Macario 2020). And the jungle, many remember, was teeming with wildlife. Even after industrial timber extraction really kicked off and the village of Nicolás Bravo started to grow, there were all sorts of creatures roaming around. "The trees would turn vivid green with parakeets," remembered a middle-aged man. "They would fly together in flocks thousands strong. There were so many."[57] Not only parakeets and other birds were plentiful. Deer were easy to spot and hunt too, as were iguanas that apparently have delicious white meat. "I used to be so beautiful. I tell these stories to my daughter, and it makes me want to go back in time […] I'll be honest, I didn't value it enough then. But now all of that is lost," he said melancholically. The forest, he though, had drastically changed especially after hunters that shoot to sell the meat had left their mark. Years ago, he had seen a beautiful savannah burned by commercial hunters to lure deer out of hiding. "It was them who ruined the fauna," he continued. "That was a truly beautiful place until they started shooting […] It's obvious that you cannot make a living out of that. Hunting is not a job. They are just lazy." In the 1970s, however, hunting was a source of income for many. "That was what people used to make a living from back then, selling jaguar and crocodile pelts," related another who used to go crocodile hunting with his father. "We got on a *cayuco* [a small canoe] and put chickens on hooks as bait in the water […] Then my dad salted the pelts. He had them all together. You could see the salt dripping from them."[58]

Killing jaguars for sport was legal too. Before it was outlawed in 1987, wealthy hunters from Mexico and abroad would come to the south of the Yucatán Peninsula to shoot at them. As an elderly man who used to work as a bush guide related:

> In that time there were so many animals. So many. Wherever we went, we would see [jaguar] tracks everywhere […] [Hunters] came with permits to kill deer, to kill turkeys, to kill jaguars […] There were so many [jaguars] that you could take your pick […] [Hunters] didn't come for small animals, they wanted the adults, the big ones […] But now all of that is over.[59]

Despite it being illegal, hunting never stopped in Laguna Om, neither for sustenance nor for money. "Hunting is forbidden now, but people are naughty. In almost every *ejido* there are people that hunt regularly," said a man who works in jaguar conservation.[60] Moreover, many affirm that wealthy hunters from Chetumal, the state capital, pay local guides to come and stalk deer and other animals. The *comisariado* has even made formal complaints to state authorities and requested the National Guard to increase surveillance in the area (Cauich 2021; VoxQR 2019). "They are shameless. You can see them passing at night on their bikes, shouldering their rifles," says an *ejidatario* who often sees poachers riding by.[61] Jaguars are also persecuted. Regular reports emerge detailing seized pelts and other body parts of the big cats, as well as possible wildlife trafficking networks (P. Hernández 2016; Rodríguez 2019). Studies have further linked increasing jaguar poaching in Latin America to the expanding Chinese investments in the region (Branford 2020), prompting NGOs to plea for increased militarised surveillance.

Concerned by the impacts of poaching and illegal logging, a group of locals organised to monitor and patrol the *ejido*'s community forest. [xx] They called themselves Grupo Jaguar and now receive a modest tri-monthly cash payment and branded t-shits from the state's Environmental Protection Bureau (PPA, in Spanish) to patrol and report wildlife crime, primarily in Laguna Om's Voluntary Conservation Area (VCA). They patrol the community forest as often as economic resources allow and report anything suspicious to the *comisariado*

[xx] The structure of the *ejido* already includes a Surveillance Council, which is in theory responsible for monitoring and reporting unauthorised use of natural resources. Nonetheless, internal and external initiatives converged to create the new group of Community Guardians.

or the rural police. The Community Guardians, as the state government calls them, do not carry weapons, nor are they allowed to detain suspects themselves. Nonetheless, some see it as a high-risk activity since, according to several participants, they know that the poachers are also implicated in violent narco-related crimes. Thus, rising violence levels linked to drug trafficking have added another layer of peril to the already tense activity of stopping hunters.

Local concern for environmental degradation also prompted the *ejido* to, in 2009, halt all forestry activities and allow timber species to recover. Since the buoyant 1970s and 80s (see Chapter 1), the *ejido*'s forest had lost most of its commercially valuable trees and revenue from timber had plummeted until, 13 years ago, each *ejidatario* received a meagre 750 USD a year (Macario 2020). Forestry restarted in 2020, and now the National Forestry Commission (Conafor) aims to ramp up timber production in the region via a programme that allows forest *ejido*s to access growing subsidies as they increase logging volumes. Part of the same 'sustainable forest management' strategy are Payments for Ecosystem Services (PES), which take up the largest share of the federal government's budget for monetary support to rural forest communities (Madrid and Hernández 2021). Thus, forest management histories, subsistence and commercial hunting, memories of former natural abundance, and the lives of people who migrated to Laguna Om are entangled in a complex mesh that, perhaps unexpectedly, creates opportunities for learning to live with non-human nature.

Food is gratitude

Subsistence hunting is part of daily life in most *ejidos* of the Yucatán Peninsula (Candelas-Ramírez 2019; E. Q. Hernández and Calmé 2002; Flores et al. 2018). Primarily done for supplementing insufficient monetary economies and traditional agricultural practices, it ties humans and non-humans together, albeit in a brutal way – the relationship of killing for consumption. Hunting and food, however, can also breed other kinds of connections. An elderly man who has worked in jaguar conservation for more than thirty years experienced as much the first time he saw a jaguar in the north of Mexico. It was not a peaceful encounter. That jaguar died there.

> I grew up in the mountains and started hunting wild boars because they ate our corn. Of course, we also hunted them to eat […] I started going to the bush and liked hunting

> because there was scarcity. There were no jobs and the only way to get meat was to have a pig that you fattened and killed or to go hunting. Everything we killed we ate […] That was how, accidentally, I first bumped into a jaguar that my hunting dogs had chased until it perched on a tree. I didn't even know it was a jaguar. I had heard that there was an animal that was killing calves and such, but I didn't know anything about that. I killed that *tiger* and luckily it was the one that was causing harm.[62]

Following that fortuitous encounter, he became a big cat expert. He developed a method for tracking them using hounds and even a makeshift instrument that imitated their roar. For decades he used his abilities to guide trophy hunters looking for jaguars, until in 1987 jaguar hunting became illegal and he turned to conservation. "I like it better now because we are not doing any harm. We still chase the cats, but we don't kill them […] I feel like I'm repairing some of the damage that we have done," he assured.

Other people that currently work in conservation were also inspired by their hunting days. One of the jaguar trackers that currently works in the Palmas field station said:

> I love the bush. I started hunting when I was nine. Now I've found a way to go hunting without killing. That way I can still use all my energy running with my dogs. That adrenaline is very cool […] I like this job because I love to be in the forest. It is what I want to do with my life, and on top of that I get paid.[63]

Hunting can mean several things simultaneously. It combines the joy of being outdoors and the thrill of the chase. But perhaps most importantly, it is a means for obtaining sustenance. "My dad pioneered the [conservation] group because he raised us hunting," says the son of Luis Argüelles, the late founder of Grupo Jaguar. He had come from Guatemala after fleeing the infamous Kaibil army and earned a great deal of respect for his up-front –some say fearless– approach to ending poaching. "He was tall, had a beard, and although he didn't carry a gun, he walked like he was shouldering an AR-15," said a man who used to go with him on surveillance rounds.[64] His son told his story with similar admiration.

> As my mum says, we sometimes didn't even have money for a taco. My dad went away for a couple of days to the jungle to hunt. And if he was unlucky, he stopped at the lagoon to fish so we could eat that night. When I was 24, he disassembled his carabine and put it away […] He said, 'I have taken a lot from nature, now I have to give back protecting the community forest'. Because there is a lot of [rich] people from Chetumal that come hunting for sport, but this area is not for that […] He said 'Not because you work in the government do you have the right to destroy our land, wasting animals that other people need to take to their families'.[65]

Argüelles, who had been able to raise his family by hunting despite financial difficulties, felt the need to protect his land from outsiders who exploited it for sport and money. At the same time, hunting begot a sense of gratitude that led him to devote years to stopping what he perceived as an assault on a source of food for the community, inspiring others to do the same. Following his example, the current Grupo Jaguar works to stop illegal incursions into the VCA. And although in principle hunting is forbidden in the conservation area (Sosetec 2018), they still allow some practices they perceive as sustainable, like fishing in the lagoon with hooks but not with nets, which cause too much damage. Thus, they permit the use of a communal source of sustenance while ensuring it is not depleted. Others, like the elderly man who turned to jaguar conservation agree that killing animals is not the problem, it is why you do it.

> There have been many people who hunt to sell the meat. Those are the ones who destroy because they are never satisfied. If I kill a deer, I will have meat for 20 days. But if I kill two and sell them, when am I going to stop?[66]

One of the members of Grupo Jaguar had similar thoughts. "It's ok to eat [an animal] every so often. People have that right. Why not? But not every day," she said.[67] For many families, hunting meant that they could get by and have better food intake. Moreover, bushmeat, also happens to be nutritious and tasty. "Have you ever tried an armadillo done in *pib*?[xxi] Oh, it's so good!" exclaimed a woman in her fifties. "Sometimes [my husband] would come at midnight with one. 'Kids, your dad brought meat!' I would say. And there you had us, scavenging away like puppies," she remarked with crackling laughter. "It is the truth. I'm not ashamed to say it."[68] Stories of the delicacies of the jungle abound. Armadillos cooked underground are said to be exquisite. Others remember that turtles from the lagoon were some of the best things they had as kids. There was even a lady who, people said, had lived well over a hundred years because she ate nothing more than tomatoes, corn, chilli, and pumpkins she grew herself, along with the occasional bush meat. Modern supermarket food, many assured, could never compete with getting your nourishment from the land. A young man who has for years worked in jaguar conservation concurred. "[In the village] you know where the food comes from. In the city, how can you know that? […] The meat you get from

[xxi] Pib is a traditional Maya technique where meat is cooked underground.

the bush is not contaminated like the industrial stuff we often eat." His grandmother was a hunter too, and she always had delicious food, something he missed whenever he was forced to live in cities for work.

> We were used to eating everything: racoons, *tepescuintles*, iguanas, doves; things that people think is wrong [to eat] […] Me and my sister used to go to my grandma's ranch. She had bananas, fish, guavas, and we could take whatever we wanted. You can't do that in cities. There are no bananas in the city! […] In cities you have to pay for everything. You can't make tortillas there; you have to buy them. They won't sell you stuff and let you pay for it later, either. They won't share even water! […] In the village, if I don't have anything to eat, I can go hunting or fishing and bring three kilos of tilapia home […] In the city you are not free. You are limited in every sense. I hate it there.[69]

His animosity was not only born from economic scarcity. A few years ago, when he was working in Playa del Carmen, one of the main tourist cities in the north of Quintana Roo, he was violently arrested for alleged drug possession when the police raided his neighbourhood, one of the poor areas of the city. These kinds of 'operatives' where police perform random arrests are common (Maza 2021) and are mostly done in poor boroughs, where people live as temporary workers coming from nearby villages.

A few things should be stressed from these stories. Firstly, that people care about the health of the forest because it provides food. Many participants are aware of their material scarcity, which can be partially remedied by obtaining food from the land. The ability to make a living from it influences the will to protect a life-giving ecosystem, prompting some to actively work on conservation projects. Since food is available in the forest and is perceived to have much higher nutritional value than packaged goods, it is in everyone's best interest to keep the source of it thriving. Further, there is an important distinction between the motives of hunters. Killing animals in moderation and for self-consumption is acceptable and amenable to preserving communal resources. Hunting for money is not, as it leads to overexploitation, especially when done by people external to the *ejido* who do not depend on the forest. Further, sourcing food from the land challenges the dependency on the monetary economy. Why would you go to cities, where food is packaged and expensive, when you can find better, cheaper fare in the jungle? Being able to sustain oneself also reduces the need to migrate to urban areas, where work is often precarious and people are subject to marginalisation and police harassment. As mentioned earlier, some families managed to raise their children

because they could get food for communally owned land. Thus, conceiving the shared forest as a source of sustenance can attach to it convivial values like gratitude, freedom, health, and safety.

For some people, these are enough reasons to put land beyond monetary appraisal and to seek ways of living with other creatures in the forest – even jaguars. "I am also an environmentalist," said an *ejidatario* who had asked jaguar conservationists for help after a *tiger* killed two of his calves (see Chapter 4).[70] Unlike other ranchers, he refused to shoot the jaguar to protect his cattle and was looking for alternatives.[xxii] "We have to understand that this was their habitat," he said. "All of this used to be forest […] I have reforested my land and I don't want to fell more trees, brother. They give me oxygen. They give me shade."

Another reason to keep the trees was climate change. He knew rain patterns were deteriorating. Lately they got either not enough rain or too much. But precipitation was not the only thing that was different in the *ejido*. When his father had first come to Laguna Om, he remembered, he had done so "on foot", carrying not much more than what he was wearing. Like many others, his old man had managed to make a living by working on his land. Now that his father has died, the man is one of the few people who still manage to grow plenty of food in his parcel for him and his family, even a little extra that he sells from his front door. He regarded with pity the fact that not very many did the same, especially the new generations who were selling their usufruct rights. Not him. He believed land was beyond monetary value and should not be sold. He worked daily on it and lived from Monday to Friday in a small shed in his ranch, coming back to his house in the village only on weekends. When I asked him why he did this, he said:

> I love it here, brother. I like to wake up early and enjoy the morning dew. Here the air is purer than in the village; I feel regenerated […] When I was a kid, I used to watch my father work the land and I realised that the earth is the key to life. The land gives you everything. Bring me a single scientist, an engineer that can make corn that can make rice. No, everything comes from the land, brother. That is way it is unsellable.[71]

[xxii] Shortly after I left Laguna Om, he managed to get the conservationist's attention and was promised technical support in the form of special lighting for his corrals to avoid jaguar predation. If they followed through on these promises is uncertain.

During one of my last few days in Laguna Om, I met a woman in her forties who had worked with the *tigreros* many years ago. She was only a teenager back then, and desperately poor. "I suffered a lot. I had to work for my food since I was very young," she said. Looking to make a better living, she had followed her older sister to work and live in an encampment similar to Palmas. I asked if she liked living in the jungle. "Oh, yes! Well, having all the food, more than anything. As long as there's food, I'm happy."[72]

Knowledge is heritage

"The knowledge of the *gente de monte*[xxiii] is absolutely essential and will give value to this project," said one of the Toroto employees when they explained why local expertise was necessary for the baseline carbon survey (see Chapter 5). They were relying on experienced *ejidatarios* to identify each tree in the measuring sites, allowing the company to accurately quantify how much carbon a particular species would capture over time. "I know you are an absolute magician for this kind of thing," said the Toroto employee in an endearing tone to an elderly man who was known for being an expert in recognising trees.[73] The old man looked pleased with himself and straightened up in his chair, wearing a proud grin.

In Laguna Om, knowing the forest is indeed a source of pride. "I respect my elderly *compañeros* very much," said one of the members of Grupo Jaguar. "No one knows [the forest] better than them. They are true field guides and we learn so much. Very few know [the *ejido*] like they do, the edges of it, and we have been lucky enough to work with them."[74] These experts not only knew the names of the trees, but they could also walk in the jungle for hours, opening tracks with their machetes and orienting themselves under the canopy of the forest without the need of a compass. A group of women close to the *comisariado* also said that they enjoyed going on hikes and driving on forest roads with them because they would teach them the names of plants and tell them stories. And even though many of the old-timers did not have a formal education, they had been part of conservation projects before. One of them gleefully recounted his experience:

[xxiii] This expression roughly translates as 'bush people', meaning individuals with ample knowledge and experience of living and working in the forest.

> I went with two biologists to count crocodiles. They gave me a notebook and while we were moving on a boat, I had to jot down the time, place, and size [of the animals]. But I'll be honest, I studied only until third grade and I'm not fast with a pen. They were moving fast, so when they looked at the notebook, I had only scribbled down some things that you couldn't even read […] I am not ashamed to say it. We do other things that are also difficult and valuable.[75]

They certainly did. Toroto, the carbon credit company, was counting on them not only to accurately name the plants but to motivate young people to join the effort as well. One of the main motivations of the students in their twenties who were considering partaking in the project was interacting with more knowledgeable community members. "More than anything, I'm here because I want to learn from them and to get some experience," said a university student who was happy that he had been assigned to a working group with two men that, in his opinion, really knew the forest.[76] Even though he came from a family of *ejidatarios*, he had not grown up working the land. He, as many of his generation, he had pursued a more formal education and was about to graduate as an agronomist. Nonetheless, he felt he knew very little about his land and was eager to learn.

Formal schooling is spreading in the state of Quintana Roo. More people finish secondary education today than they did ten years ago (CONEVAL 2020), and while there used to be only a primary and secondary school in Nicolás Bravo in the 70s, there is now a high school in town and a university in Xpujil, 50 km west. Laguna Om has all kinds of local-born professionals, including lawyers, foresters, biologists, veterinarians, accountants, and agronomists. However, many struggle to find career opportunities and think their community is squandering their talent. "[The *ejido*] is, how to put it, not so ignorant," said an employee of Conafor who grew up in Nicolás Bravo.[77] Like many other young and well-educated people, he regarded schooling and academic degrees as a the opposite to ignorance, and thought the problem of the community was that positions requiring highly specialised knowledge, like executing forestry or conservation projects, were not assigned to professionals. Rather, they were kept within older political elites that lacked enough schooling for the job. He had been able to work his way out of the *ejido* and now helped rural communities to access subsidies from Conafor.

During an earlier meeting with the *comisariado*, he and his co-workers had introduced the agency's new rules to access conservation and forestry subsidies (see Chapter 5). One possibility was using the Voluntary Conservation Area (VCA) to channel more Payments for Ecosystem Services (PES). Another was increasing timber production to move up a ranking that classified *ejido*s according to their production capacities. As they moved up the ladder and increased wood extraction, they received a higher government-issued certification and were entitled to more public money. Payments could then be reinvested to acquire more equipment such as sawmills, subsequently increasing timber volumes and getting more cash.

These stories introduce us to a double ladder of knowledge – schooling and science. In his book *Deschooling Society* (1971, 33), Ivan Illich wrote that "an individual with a schooled mind conceives the world as a pyramid of classified packages accessible only to those who carry the proper tags." This logic applies to both people and rural societies. Those with the correct degrees, provided by education institutions, are perceived as entitled to accessing the benefits of 'higher', specialised labour. Simultaneously, rural communities with the right certifications, also provided by state institutions, can access the bundle of benefits of the next step in the ladder. Both are supposed to lead to economic growth – more money that brings chances of further scaling the pyramid. At the base of the structure remain other individuals and societies that lack 'formal' knowledge geared for progress (Tsing 2012). Nonetheless, as Toroto employees put it, their knowledge is not irrelevant – quite the opposite. Local's ability to identify trees, for example, is essential to market-based environmental interventions such as carbon credits. It provides crucial information about the forest and even imbues conservation projects with the legitimacy of "considering community and traditional knowledge" (Conafor 2021, 5). However, this knowledge is not sufficient to open the flow of conservation money. Science needs to step in and validate the process via internationally recognised institutions[xxiv], relegating local engagements with nature to an inferior position; their value simultaneously captured and placed at the bottom of the pyramid.

[xxiv] As discussed in Chapter 6, in the case of Laguna Om's carbon offset project, that institution is the California-based Climate Action Reserve.

Some people recognise this process as unfair. "They are using your empirical knowledge to give credit to their [carbon offset] project," said one of the students to senior *ejidatarios* who were debating joining the effort.[78] Experienced *ejidatarios* had already heard the wages offered were too low – 300 MXN (15 USD) a day[xxv] – and they knew their experience was worth more than that. One of them said:

> I respect people who have studies, but it's not the same thing […] We know [the job] won't be easy, so we don't want to give away our work. What are they going to do without the tree spotters? […] We'll hear them out, but we didn't go to school. How are we going to fight them?"[79]

Assigning formal schooling a value higher than local knowledge also conditions what people conceive as possible to improve their own positions, creating power imbalances within the community. "People who have more knowledge take advantage of the other people in the village," complained one of the members of Grupo Jaguar who, even though he was almost 40 years old, was putting himself through university to get better economic opportunities.[80] Schooling is widely regarded in the community as a ticket to a better life. Many parents who could not go to school themselves are proud that their children have or are pursuing bachelor's degrees. Maybe their daughters and sons could have better chances than they did. "I wanted to be a biologist," said a farmer whose son is a veterinarian. He loved animals and plants and had read a lot of the work by *Carlos* Darwin. When I pointed out that many biologists would be jealous of him for living so close to the jungle, he laughed.

> As friend of mine used to say, we are biologists, because we know the plant species and what each one needs. We are engineers. We are architects who build irrigation systems. We are chemists, because we know what the earth needs – if it is lacking potassium, nitrogen. That is chemistry. And on top of that, we are businesspeople![81]

His expertise had remarkable yields. As we walked around his parcel, he showed me more fruits and vegetables than I had ever seen. Carrots, pumpkins, guavas, corn, cucumbers, bananas, and potatoes grew alongside dozens of crops, many of which I had never heard of.

[xxv] It was later clarified that payment was 300 MXN per measuring site. Toroto assured that people stood to make up to 1,200 MXN in a day if they worked fast and did multiple sites per day. Meanwhile locals thought this was impossible due to the difficulties of working in the bush,

I asked where he had learned to grow such astonishing variety. "I was taught by *los antiguos*[xxvi]," he replied. He had learned his trade from older generations and reckoned that young people were losing interest in the land because "their parents didn't teach them" how to work on it. At the same time, he recognised there were youngsters with studies who could change things in Laguna Om for the better. For instance, he thought the *ejido* "need[ed] more technicians, engineers and biologists that can direct reforestation projects." He was also happy the carbon credit project was starting soon. "We have been trying for a long time [to get the offsets going] but we haven't succeeded so far […] Even if we don't see the fruit of this, our children will. It will be there for our grandchildren."[82]

Just like the ability to grow food, the forest is something that will be inherited. That is why a member of Grupo Jaguar had stopped hunting for money and was now working in conservation. Years ago, every parakeet season, during the tropical winter, he went out with a net and captured birds by the dozen to sell for a dollar each. Once, he hunted a jaguar too. It was sitting across a small lagoon when he spotted it. "It was so tame. It even saw me, sat down, and didn't move. I even had time to grab my shotgun and I shot it square in the face. Then it was there, writhing the poor thing."[83] He then skinned it and sold the fur for 15 USD. When I asked him why he had done it, he said that it was "out of curiosity." At the time, he did not think it was wrong. But his brother made him change his mind. "He made us ponder what we were doing. 'If you keep doing that, your children are not going to see them', he said […] If we had valued [the animals] enough, this place would still be very beautiful," he confessed. He was now among a group of people who wanted to stop the longest running economic activity in the *ejido* – forestry. The jungle, he said, had been overexploited for too long. Most valuable species were gone and the earnings from timber were almost non-existent. Thus, when he heard that members of the National Alliance for Jaguar Conservation (ANCJ) were offering the *ejido* a carbon offset deal that required them to stop logging, he agreed. The *comisariado* wanted to expel ANCJ members for attempting to deprive the *ejido* from a source of income (see Chapter 4), but he wanted them to stay. He did not mind that

[xxvi] Literally translated, '*los antiguos'* means 'the old ones'. However, I am keeping the original Spanish as it provides nuance that might be lost in the westernised and often romanticised understanding of the word 'elders'.

they would lose money from forestry, nor did he care about what the *comisariado* would do with the jaguar conservation money. He wanted to stop environmental degradation so, maybe, his children would see some of the natural abundance he experienced as a child.

Conservation offered him a way to preserve his children's heritage; for young people, it is a chance to recover it. "I like to come to these talks and pay attention because I learn new things. The old *ejidatarios* know a lot," said a young woman during a break at the Toroto carbon offset workshops. The woman, who had come back to Laguna Om after completing a master's degree, said she had joined to learn too. "I don't know my region," she admitted. Maybe now that they were working together with the older *ejidatarios*, she could do a compendium of medicinal plants in the area. Perhaps even patent some of them and start a business. In any case, they had to come up with some way to transfer that knowledge to the younger generations. "If not, what is going to happen to everything the forest experts know?" she asked.

Friendship is action

"You have to speak up! You must stand your ground and fight for what's fair […] We're all equal."[84] One of the outings of Grupo Jaguar had turned political. After walking in the jungle for hours and having a couple of beers, people were speaking frankly about their positions on several issues. They talked about things that were wrong with the *ejido*, things that they disagreed with and how they did not like people in power. But most importantly, they seemed to have each other's backs. "You are masters of the forest!" exclaimed one after another member said he felt powerless because he had not gone to school and could barely write. "Yes, this man is badass," agreed another. It seemed that the surveillance trip of the Community Guardians was not only about patrolling the forest. This was a kind of hybrid gathering – part community work, part day hike with friends, part political meeting.

"Our *convivencia*[xxvii] is the best," said one of the members of the group. "You learn so much from the *compañeros* and *compeñeras*. Talking in the forest, the stories, the jokes, the laughter, the anecdotes. You were there once, remember?"[85] I do. I remember being surprised by everyone's jolly mood while hiking for hours in ungodly heat, and how they called each other 'jaguar' to emphasise they were a team. I remember the diversity of the group – the oldest man was beyond 70 while the youngest woman had not yet reached 30. I remember the excitement of seeing spider monkeys, finding a crocodile's nest, and identifying tree species. I also recall everyone's high spirits after the walk and the more serious talk that followed.

A woman who had been in the group for two years considered that being part of Grupo Jaguar had given its voluntary members[xxviii] an opportunity to get better acquainted with the *ejido* even if, like her, they had been away from their community for a while.

> We go out during the day, evening, and at night. I won't do it justice if I tell you how it feels. You have to hear the silence of the night. It is unbelievable […] After all these years, I'm getting to know parts of [the *ejido*] that I hadn't been before. I fell in love with my village again.[86]

At the same time, it had brough together a diverse group of people that now felt empowered to participate in public *ejido* affairs. She continued:

> We got to know each other by going out [on surveillance rounds] and little by little we became friends, *compañeros* […] Our group has women, men, elderly *ejidatarios*. It's great. It gives us a chance to analyse our thoughts and debate ideas with the knowledge of different ages […] And we're speaking up in *ejido* assemblies. If we don't agree with something, we say it… It gives us satisfaction because we talk and debate about many topics, both about our work and other issues in the *ejido*.[87]

[xxvii] In Spanish, *convivir* means 'to live with'. Derived from that same word, *convivencia* means the time people get to spend together, to live together. I preserved the original Spanish as it gives a daily example of the word the inspired Ivan Illich's notion of conviviality while he lived in Mexico.

[xxviii] Although they receive a modest compensation (2,000 MX a month) provided by the state's Environmental Protection Bureau, they signed up to the group voluntarily.

The friendship bonds created in the jungle, she felt, did not stay in the forest, they spilled over to other areas of community life. They even had an impact on gender equality.

> In our group of ten people, there are four women, and I can assure you that we are the leaders of the group. By supporting each other, we are getting noticed, even in political aspects […] Unfortunately, the men often don't accept that we can do this kind of job, but we have proved them wrong […] The government is giving women that chance and we are responding accordingly.[88]

Remember, this is the chapter of messiness and contradiction, of noticing how resistance to the dominant patterns emerges untidily within the same patter (Quijano 1999). In her words we can see an apparent conflict. On one hand, being part of a conservation group and creating bonds with *compañeras* via coexisting in nature opens avenues for subverting the hegemony of male-dominated society. The ties made while sharing knowledge and time further empower people who feel at a disadvantage to speak up and participate in public affairs, hence challenging existing hierarchies. At the same time, since Grupo Jaguar is linked to a government agency, albeit by a very weak cash income, members feel the need to express gratitude for the opportunity to participate, thus reaffirming a vertical structure dominated by the state. Nonetheless, the subversive spirit is not lost and has led to a perception of higher participation in the community's public life.

Political organisation within conservation groups can also brew community resistance against external pressures. Almost ten years ago, Luis Argüelles, the late founder of Grupo Jaguar, had organised a group of people to protest the low payment the government was offering the *ejido* for using their land to build a high voltage power line. They blocked the road that led to the construction site and refused to let personnel of the Federal Electricity Commission (CFE) pass until they agreed to a higher payment. "He told them 'Here in the bush we're going to negotiate. And bring the federal government if you want, but you are not coming through'," related a woman who had witnessed the events.[89] They succeeded. In the end, CFE agreed to pay the *ejido* 2 million pesos more. But the monetary victory is not what I want to highlight here. Rather, it is the fact that a figure like Argüelles, well respected for defending his *ejido* against poachers and for his profound knowledge of the forest, had led people in yet another land defence action. Even more, some of the *ejidatarios* who followed

him that day are still part of Grupo Jaguar and proudly relate stories of patrolling the community reserve and being together in the jungle. Interacting with the tree-covered landscape creates bonds of friendship, which in turn breed the possibility to take political action. And perhaps inadvertently, jaguars are present in the middle of that linkage as a symbolic adhesive that bounds this environmentally active community together.

"Why did he name it Grupo Jaguar?" I asked Argüelles' widow. "I'm actually not sure," she replied. "I never asked him." Then, she started looking for a scrap of newspaper where her husband had written something curious. She could not find it, but she told me what it said: "The day that I'm not around, don't burry me with a cross; put there an image of my friend the jaguar instead."[90] There were many stories of Argüelles and his non-human friend. Once during a night-time surveillance round, he and a *compañero* had heard a *tiger* near. As Argüelles' son remembered the anecdote:

> He told his friend: 'Lie down, put your hands and ear on the ground'. He said that they could hear it roar. Even the earth rumbled, like it was 10 meters ahead. Then they saw it cross the road, not 100 meters in front of them. Two hops and it was gone, back into the trees.[91]

In Laguna Om, the word jaguar has a double meaning. It signifies both the four-legged mammal that walks the jungle at night and the people who voluntarily patrol their forest. That symbolic kinship has inspired people to give back to the land that supports them and look for ways to coexist with other creatures, even via tense relationships and unfinished resistances. Maybe it can also inspire conservation to rethink its role – to encourage not transactions, but collaborations; to find meaning not in payments, but in interdependence; to think of ways not to 'save nature', but to live with it.

Discussion and conclusion

This chapter has followed stories in Laguna Om to show different reasons why research participants join conservation efforts. It begins by outlining how political ecology and decolonial literature is useful to find alternatives views of conservation. It presents the main components of convivial conservation, a proposal to detach environmental interventions from market-based instruments, and provides an overview of the political economic context,

introducing the importance of hunting and forest management for the local society. Later, it investigates alternative relationships between people and the ecological context, or else, non-commodified links among humans and more-than-humans. In the terms of convivial conservation, they look for 'embedded value' and 'affective affinity', which are "irreducible to the destructive capitalist ratio" (Büscher and Fletcher 2020). In other words, reasons why people care about protecting nature that have little to do with money.

Earlier we asked what ties the people of Laguna Om to their land. What kind of meaningful relationships emerged from the 'slow disturbance' (Tsing 2012) of the jungle? In other words, how can meaningful relationships emerge from an apparently exploitative relationship with non-human nature? Perhaps the most fundamental affective link is found in food. People in Laguna Om care about the health of the forest because it provides sustenance. Gratitude coming from the ability to secure a livelihood, often through hunting, has prompted participants to lead and work in conservation projects. And while killing animals for money is perceived as detrimental to the ecosystem, subsistence hunting often motivates people to keep the forest, a communal source of nourishment, thriving. In the words of participants, "land is the key to life" itself. Such realisation also leads people to think that money is not a sufficient or even adequate measure of nature's value. "The land is unsellable" because it provides everything one needs to live. These ideas challenge the core principle of market-based conservation – that nature can and must be monetarily appraised to be protected – and open possibilities for a convivial redesign of conservation instruments.

Conservation areas are useful to see the contrasting implications of both approaches. Currently, all types of hunting are forbidden in Laguna Om's VCA (Sosetec 2018). This prohibition has not only failed to stop poaching, but it also forecloses and even criminalises a vital – meaning *necessary to life* – connection with non-human nature. Reframing community conservation areas as 'promoted areas', "places where people are considered welcome visitors, dwellers, or travellers" (Buscher and Fletcher 2020, 265), would necessarily revalue this connection rather than substituting it for market-reliant strategies, like VCA's Payments for Ecosystem Services (PES) currently do. It is important to acknowledge that there is a debate surrounding the sustainability of local hunting practices. While traditional conservation approaches see it as a driver of jaguar decline and present

growing human populations as competing with large carnivores for prey (Zarza, Chávez y Ceballos 2007; Chávez, Ceballos y Amín 2007), decolonial scholars have repeatedly shown the colonial bias of blaming environmental degradation on subsistence uses of wildlife while ignoring – or even supporting – more harmful extractive practices elsewhere (Domínguez and Luoma 2020; Ogada 2017). Moreover, as shown before, protecting a communal source of food has inspired people to act against commercially motivated hunters who exploit the forest for profit. And while this issue might be either unresolved or highly context specific – thus meriting further research from a decolonial lens – the core of the argument is that sourcing food from the land creates feelings of respect and gratitude (Welch 2014), while worldviews contrary to capitalism emphasise alternative ethical dimensions of nature and how to interact with it (Sullivan 2017). These dimensions have bred in participants the desire to coexist with non-humans, even problematic top predators. Further, as I have argued elsewhere (Ruelas 2021), they open room for other economies rooted in the land, rather than being mediated by the market.

Refocusing on alternative relationships with nature means substituting technocratic approaches for more democratic engagements (Büscher and Fletcher 2020), which also requires reshuffling hierarchies and meanings of knowledge. As Quijano explains (1999), coloniality establishes Western science above local knowledge. This ladder enables a double commodification and (intersubjective) alienation of the land and people (Dunlap and Sullivan 2020). Firstly, it facilitates the capture of useful but 'inferior' local knowledge that adds value to and legitimises market-oriented conservation schemes. Knowledge about non-humans is detached from the people and experiences that produced it, instrumentalising it to sell conservation products. Thus, environmental governance institutions, who promise economic returns and the opportunity to participate in conservation projects, can utilise it to limit and restrict relationships with nature by reducing them to consumer-producer transactions (Büscher and Fletcher 2015; Álvarez and Coolsaet 2020). Moreover, placing science above local knowledge, supports "associated powerful interests" through "policy relevant knowledge" (Sullivan 2017, 223), ensuring that institutions and actors who have scientific authority always have an advantage over rural communities and get to decide how nature is conceptualised and managed.

Simultaneously, the conceptualisation of progress as a pyramid with ever higher bundles of benefits (Illich 1971) detaches young people from their cultural heritage via channelling them towards formal schooling and negating them access to orally and experientially transmitted knowledge. Then, these people reproduce the discourses of development in their contexts, strengthening the positions of the institutions that promote them. Well-educated people, however, are not oblivious to this process. They recognise themselves as ignorant of their land and actively seek to participate in conservation projects to access knowledge-as-heritage. Moreover, they see the lack of opportunities for young professionals in the village and beyond as signalling the failure of the schooling system. Nonetheless, the break with the knowledge hierarchy is not clean. Some participants feel they should be granted better opportunities in the *ejido* due to their academic degrees, while others are eager to financially exploit the local knowledge they feel entitled to receive. There are, thus, unresolved tensions that view participants as both challenging and reinforcing the structures that value the kind of education obtained from schooling over 'local', 'empirical', or 'experiential' knowledge.

Quijano (1999) warned that alternatives to coloniality do not emerge neatly. They are often contradicting and found enveloped by dominant patterns. Nonetheless, reframing knowledge as heritage rather than a tool for commodity creation, as well as valuing nature through gratitude rather than currency, opens spaces for engagements with nature that are illegible to the market. Perhaps they might generate other ontologies and the 'ethical praxes' adequate to relate to the worlds they create (Sullivan 2017). Sullivan (2017, 224) argues that "what becomes known ontologically arises through social processes – shared language games, the production of texts, methods of enquiry and associated institutions." We can see these processes at work in Laguna Om – hiking and learning the names of plants; investigating together other creature's behaviours; building friendships while sweating and laughing surrounded by trees. These shared activities ultimately allow people to see nature as more than something to buy and sell. It confers non-humans and ecologies a set of values generated through interaction – we could call that 'embedded value' (Büscher and Fletcher 2020) – and allows people to step outside the worldview that considers the market economy a 'natural' process (Büscher and Fletcher 2015). As Büscher and Fletcher (2020) write, "living with

nature is acute: it directly triggers or stimulates the senses." That intense multisensory stimulation, the elation of coexisting with and in the world, is the catalyser of affective bonds that welds the social and ecological together.

Finally, friendships born from conservation activities introduce possibilities for democratic engagement, not only with environmental issues, but with other aspects of communal life. Convivial conservation advocates democratic engagement as a way to transition from expert technocracies – which tend to value nature from afar and in monetary terms – to value determined in context. It envisions a world where potentially all people can "live with all nature" and argue that "the way significant nature is often managed, namely in a top-down fashion based on technocratic expert opinions, is inherently alienating for most of us" (Büscher and Fletcher 2020, 277). As discussed in Chapter 5, such alienation is also enabled by local elites that often align their interests with those of market-motivated experts. Hence, re-focusing conservation programmes to strengthen community ties through experiential engagements with nature – such as active involvement in research programmes, freely sharing scientific information, encouraging knowledge transfer between generations – can challenge existing power dynamics and create social bonds that increase participation in other areas of communal political life. In other words, being part of conservation practices can amplify the voices of historically disadvantaged people, democratising how nature is managed and enhancing the communal capacity to resist external pressures that expand capitalism in their contexts.

Having said this, placing conviviality at the centre of conservation does not offer easy fixes. There is no silver bullet or pre-cooked solution. In a sense, we are trying to move away from the recipes of market-based logic. What thinking through conviviality offers is a series of questions we should use to evaluate conservation strategies: Do they contribute to preserving local knowledge? Do they strengthen community ties, both between people and with non-humans? Do they heighten appreciation for and closeness to the land? Do they contribute to preserving vital connections to the landscape, such as food? If they are not, then we should change focus. And if we struggle to see other options, maybe jaguars can help us find them.

Chapter 8 – Conclusion: Imagining Jaguars in a Post-Capitalist Future

"In cities, you have to pay for everything." That phrase, said by one of the men that work at the Palmas field station, will stick with me for a while. It is so simple, uttered so matter-of-factly. Yet, it points towards the very thing that capitalism will make us believe – that we *should* pay for everything, even our most basic links to the rest of nature. Access to food, clean water, and the privilege of having trees absorb carbon from the atmosphere, for example, should be enclosed and sold as 'services' provided by an entity external to humans. Jaguar conservation in Southern Mexico, this thesis reveals, is part of that fabrication and another way of perpetuating the delusion that money is the ultimate value of the more-than-human. This in turn fuels the very political economic system that is responsible for the decline of the species by allowing infrastructural expansion, severing socio-ecological relationships, and reducing links between humans and non-humans to market transactions. The consequences of neoliberal environmental governance, this research shows, are experienced intensely by rural communities in Southern Mexico, a region that is now undergoing the escalation of capitalist logic and policies. Jaguar conservation is part of that process. To elucidate these connections, this thesis investigated the reasons of a particular community, Laguna Om, for joining jaguar conservation programmes.

Decades of neoliberal policies have made rural communities highly dependent on subsidies (Pech, Mendoza, and Sáenz 2018; Merino-Pérez 2004). This reliance offers a convenient anchor for conservation programmes that are conceived as cash handouts themselves. People need money; corporate-funded conservation programmes offer money. Easy deal. However, contrary to what environmental donors will have us believe, jaguar conservation does not alleviate scarcity, it reproduces the conditions for that money to be needed. It conceptualises rural communities as passive recipients who are perpetually looking for external income and presents conservation as a steppingstone for further transfers (Peña-Azcona et al. 2021). Thus, it begins a cycle where subsidies beget the need for more subsidies. In other words, jaguar conservation money *creates* dependency. Further, by ignoring or capitalising on pre-existing power imbalances (Aguilar-Støen 2015), neoliberal environmental governance

accentuates intra-communal inequalities and conflicts that erode *ejido*s' collective bargaining capacity. It fractures communities, alienating people from each other and their ecological context (Dunlap and Sullivan 2020). If people are isolated, the conditions of conservation programmes can be mostly agreed upon with local elites, who are in turn interested in using incoming money to retain positions of power. In short, keeping rural populations with vast natural resources poor and divided guarantees that they will need cash – and conservation is ready to provide it.

More succinctly, neoliberal environmental governance schemes depend on inequality within the world-system (Büscher and Fletcher 2015; Fletcher and Toncheva 2021), meaning that poverty and dependency are good for corporations that are eager to use their cash to 'offset' their environmental harm. The logic of 'damage here, pay elsewhere' allows wealthy donors to 'compensate' impoverished landowners for the 'environmental services' their territories provide (Sullivan 2009), thus purporting to nullify the pernicious consequences of their profitable extractive activities (Büscher and Fletcher 2015). Following the same line of reasoning, conservation can also help upgrade the promise of development. Tren Maya is a good example of this. State and private promotors of the railway assure that it will increase connectivity and create economic prosperity. And yes, they acknowledge it will have some impacts. Like one participant said, "to build you have to destroy". But jaguar conservation offers a way out of that, too. It can mitigate the harms of infrastructure by protecting big cats and their habitat. The problem is that market-oriented strategies can do so only by turning everything into products. 'Selling nature to save it' (McAfee 1999) is the name of the game: breaking it down into identical units that can be sold in markets (Tsing 2012); transforming living felines into tokens and trading them through computer algorithms; using innovative financial instruments to funnel transnational money into already dependent rural communities; capturing value from resources in place and adding it to the global economy (Büscher and Fletcher 2015). Saving jaguars, this thesis has shown, is a tool for accumulation, another plume of smoke akin to the fantasies of net zero and green growth (Hickel and Kallis 2020) that are fuelling the machinery responsible for the environmental crisis.

Towards convivial possibilities

So, where do we go from here? It is easy to get lost in a depressive panorama, but there are other more hopeful options. To discern them, we must go back to our original research question: *Why do rural communities in the Southern Yucatán Peninsula choose to participate in jaguar conservation programmes?* As we have discussed, 'community' is a blurry word. Rural societies are not homogenous (Krauss 2021) and different people have different understandings of why it is worth it to join conservation efforts. Some of these reasons are easily captured by the capitalist apparatus. Desires for economic development, dreams of financial prosperity, plans for career advancement, and schemes for political control fit easily within the parameters of the dominant economy. Add to the mix the authority of experts educated in the arts of technocracy and you will find, once again, the foundations of neoliberal environmental governance. However, other motivations refuse to be captured by the system. They reject the fixation on monetary value and reveal relationships with the more-than-human that upend a common belief in conservation: that people do not care about conserving nature unless they get money from it. We are talking about values that are not easily translated into currency, such as the gratitude that comes from obtaining food from a healthy forest even when money is scarce; the memory of former natural abundance and the will for future generations to experience it; the knowledge of the landscape that is part of the local identity; the friendships built by transmitting that knowledge and the possibilities for political action that comes from it. And even though these values emerge haphazardly and often wrapped by residues of the dominant system (Quijano 1999), they challenge the structure that understands conservation as transforming nature into a set of commodities.

There is so much room for imagining transformative possibilities that are not complicit with the destructive capitalist economy. Even further, engaging with rich socio-ecological relationships makes framing conservation almost exclusively as a set of payments seem not only inadequate but ludicrous. There will be, of course, some who disagree. I have heard conservationists say before that PES and other similar schemes are the most effective tools they have to give communities a stake in conservation. That there is little interest in environmental issues otherwise. That view, however, comes from a lack of engagement with the wider community. It is easy to assume that money is a primary motivation if one speaks

only to local elites who can use the cash. A host of different views and opinions, however, abound once we peer under the surface. It is the responsibility of those in the position to provide conservation income to acknowledge intra-communal differences and the power structures their money reinforces. Moreover, even if we presume the good intentions of market-based instruments (MBIs), we cannot escape the realisation that they are enabling harm and industrial expansion via the flawed logic of offsetting. MBI's are not compensating anything, they are financing destruction.

If we do not rely on MBI's, we will inevitably run into an issue with funding. It is true that capital flows with one purpose – to accumulate more capital. Thus, as Büscher and Fletcher (2020, 305) point out, conservation organisations need to rethink relationships with donors and, at a minimum, partner with companies that pledge to move towards a "different economic model beyond capitalist accumulation and GDP-based economic growth". This is a necessary first step. But perhaps most importantly, conservation money should focus not on scalable payments but on incentivising *independence* from capital flows. If we acknowledge the connection between obtaining sustenance from the land, self-sufficiency, and the will to protect jaguars and the jungle, then it is only logical that we would support local shared economies (backyard gardens sound like a good idea) and other strategies that enhance convivial values. This approach might eventually counterbalance the dependency on external monetary income, breaking the pernicious subsidy cycle.

Severing the infrastructure-conservation nexus is just as necessary. One of the most common arguments for linking jaguar conservation to Tren Maya is that the federal government had never shown such interest in environmental issues in Southern Mexico. It is not surprising. Paying 'attention' to conservation is a convenient tool for sanitising the project's poor environmental record. Moreover, that interest is usually short lived. The entire Caribbean coast of Quintana Roo was developed under pretences of sustainable development, and it is now widely acknowledged as an ecological disaster (Rubio Maldonado, Murad Robles, and Rovira Sanroque 2010). Moreover, while I wrote this thesis, the train has changed its route in Northern Quintana Roo and is now breaking through a dense patch of jungle, something

the President of Mexico promised repeatedly would never happen[xxix] (García 2018). Pragmatically aligning conservation with plans for infrastructural expansion is either bound to fail or a strategy to make the colonisation of new territory palatable. And while the current Leftist government would argue that they are opposed to neoliberal ideology, the continued use of market instruments to open more spaces for investments at the very least dovetails from the economic project they purport to antagonise. Current environmental governance models in the country are part of "transnational consolidations of sovereignty/power have thereby been effected through particular combinations of state and corporate/private interests" (Dunlap and Sullivan 2020, 555). Trust funds designed to integrate *ejidos* to financial markets (González 2020); increased transnational investments that aim at "developing environmentally friendly markets" (Manetto 2022); plans for alternative tourist development (Moya-Aguilar 2020) – these instances evidence the continuation of the same neoliberal logic wearing the guise of green and socially minded development.

Jaguar conservation must shift focus. Doing so, however, requires recognising that that there are no shortcuts no option but to engage with the messiness of local contexts, something current approaches fail to do adequately. Fear of drug-related violence and lack of disciplinary tools means that experts often choose to remain far from the socio-ecological entanglements they want to influence. And while some degree of caution is understandable, there is no option but to put in the work of coming into deep contact with communities and their concerns. Thus, there is space for interdisciplinary collaboration between critical social science and ecology research to create a new conservation agenda (Massarella et al. 2021). Because biodiversity conservation, contrary to what spectacular wildlife documentaries will make us believe, is about humans too. There is no 'protecting' nature while pushing people out of the frame (Ogada 2017). And while many will claim that PES and the like address the human component of conservation, that is either false or insufficient. They tear people away from the more-than-human, introducing the market as the mediator of all connections and putting them at the services of the industrial economy. The need for radically restructuring conservation – of jaguar and all other creatures – cannot be delayed. Excellent work is already

[xxix] The ANCJ, one of Tren Maya's environmental partners, has recently issued a statement to position itself against the change of route (ANCJ 2022).

being done with many species, from brown bears (Toncheva, Fletcher and Turnhout 2021) to bees (López Barreto 2021). Even Brazilian jaguars, too (Sandroni et al. 2022). And although more long-term research is needed, we can already begin to see potential actions to be taken in the south of the Yucatán Peninsula.

This thesis, inevitably a very partial account of the complexity in Laguna Om, makes one final plea: go there and listen to people. But do so with the will to imagine new post-capitalist futures, not to justify market interventions. Do it to restore connections between humans and with non-humans, not to open room for more investments. Do it to preserve the knowledge of people who are tied to their land, not to supplant it with scientific recipes. Do it to strengthen material and emotional attachments with non-human ecologies, not to replace them with industrial infrastructure and cash transfers. There is so much to be learned, so much to be explored and co-created. Biodiversity conservation research has an enormous opportunity to move beyond dispensing technocratic prescriptions and instead create meaningful bonds with humans and more-than-humans. This includes repairing relationships between people, jaguars, and the landscape. Perhaps one day, like the man who founded Grupo Jaguar and inspired others to take care of their jungle, we can see the spotted big cats not only as top predators, charismatic species, or objects of study – but as friends.

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Notes

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[2] Field notes, 18-10-2021
[3] Interview 14, 25-10-2021
[4] Field notes, Toroto information meeting, day 2, 06-10-2021
[5] Interview 14, 25-10-2021
[6] Field notes, 16-09-2021
[7] Field notes, 30-09-2021
[8] Ibid.
[9] Interview 4, 04-10-2021
[10] Interview 3, 29-09-2021
[11] Field notes, 30-09-2021
[12] Interview 11, 07-01-2022
[13] Field notes, 12-10-2021
[14] Interview 3, 29-09-2021
[15] Ibid.
[16] Field notes, 10-09-2021
[17] Field notes, 10-09-2021
[18] Field notes, 30-09-2021
[19] Field notes, 19-10-2021
[20] Interview 1.2, 28-11-2022
[21] Interview 1.3, 18-01-2022
[22] Interview 2, 14-09-2021
[23] Field notes, 10-09-2021
[24] Field notes, 21-10-2021
[25] Field notes, 15-10-2021
[26] Field notes, 21-09-2021
[27] Ibid.
[28] Ibid.
[29] Interview2, 14-09-2021
[30] Field notes, 08-09-2021
[31] Interview 2, 14-09-2021
[32] Field notes, 11-09-2021
[33] Interview 1.2, 28-11-2021
[34] Field notes, Toroto information meeting, day 2, 02-10-2021
[35] Field notes, 16-09-2021
[36] Field notes, 19-10-2021
[37] Field notes, Toroto information meeting, day 1, 05-10-2021
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[39] Ibid.
[40] Ibid.
[41] Field notes, Conafor information meeting, 11-09-2021
[42] Ibid.
[43] Interview 2,14-09-2021
[44] Field notes, Toroto information meeting, day 1, 05-10-2021
[45] Interview 6.2, 28-12-2021
[46] Interview 13, 03-02-2022
[47] Interview 6, 14-10-2022

[48] Interview 13, 03-02-2022
[49] Field notes, 30-09-2021
[50] Field notes, Conafor information meeting, 11-09-2021
[51] Interview 1, 09-09-2021
[52] Filed notes, 11-09-2021
[53] Field notes, 21-09-2021
[54] Filed notes, 16-10-2021
[55] Interview 9, 23-10-2021
[56] Interview 2, 14-09-2021
[57] Interview 12, 25-10-2022
[58] Field notes, 18-10-2021
[59] Interview 8, 29-10-2021
[60] Field notes, 24-09-2021
[61] Field notes, 25-10-2021
[62] Interview 8, 29-10-2021
[63] Field notes, 24-09-2021
[64] Field notes, 16-09-2021
[65] Interview 5, 04-10-2021
[66] Interview 8, 29-10-2021
[67] Interview 14, 01-02-2022
[68] Interview 4, 04-10-2021
[69] Field notes, 22-10-2021
[70] Field notes, 29-09-2021
[71] Ibid.
[72] Interview 10, 23-10-2021
[73] Field notes, Toroto information meeting, day 1, 05-10-2021
[74] Interview, 14, 01-02-2022
[75] Field notes, 16-09-2021
[76] Field notes, Toroto information meeting, day 1, 05-10-2021
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[84] Field notes 16-09-2021
[85] Interview 14, 01-02-2021
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[90] Interview 4, 04-10-2021
[91] Interview 5, 04-10-2021